CITY OF VICTORVILLE

NOTICE INVITING BIDS

FOR

CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST ROAD AND HOOK BLVD.

BID OPENING DATE AND TIME:

TUESDAY, SEPTEMBER 22, 2015

AT

2:30 P.M.

CITY OF VICTORVILLE
CALIFORNIA

NOTICE INVITING BIDS

I. **PROJECT: TRAFFIC SIGNAL AND STREET IMPROVEMENT ON AMETHYST RD @ HOOK BLVD.** The project generally consists of installing street improvements and traffic signal with striping on Amethyst Rd. at Hook Blvd.

II. **SEALED BIDS:** Bids shall be received by the Administrative Department, Finance Division (2nd Floor, Attn: Celeste Calderon (760) 955-5082) of the City of Victorville, 14343 Civic Drive, Victorville, CA 92392, until **2:30 p.m. PST on TUESDAY, SEPTEMBER 22, 2015 at Finance Conference Room.**

III. **BOND REQUIREMENTS:** Bids must be accompanied by a Proposal Guaranty in the form of cash, a certified check, a cashier's check or a corporate surety bond in an amount not less than **ten percent (10%)** of the bid amount.

IV. **CONTRACT DOCUMENTS:** The Plans and Special Provisions are available at the City of Victorville's website at www.ci.victorville.ca.us under Department-Engineering-Projects-Construction and by clicking on the link to download, potential bidders will be directed to an outside website Ebidboard.com.

V. **CONTRACTOR'S LICENSE:** The successful bidder must possess a valid Class "**A"** California Contractor's License, at the time of the award of this contract, to complete the work as described any contractor not licensed shall be subject to the penalties imposed by such laws.

VI. **DISADVANTAGED BUSINESS** The requirement of Disadvantage Business Enterprise does apply to this project at a DBE goal of 7%.

Dated: August 18, 2015

_____
Marcie Wolters, Assistant City Clerk

CITY OF VICTORVILLE

CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENTS AT AMETHYST RD & HOOK BLVD

INSTRUCTION TO BIDDERS

PROJECT SUMMARY: The nature of the work is the installation of a Traffic Signal control for the intersection of Amethyst Rd and Hook Blvd with minor street improvement. The traffic signal shall include the electrical service, controller cabinet and equipment, poles, signs and safety lighting. The street improvements are the completion of a concrete cross gutter and curb returns with handicap ramps, curbing, sidewalk and minor pavement.

I. BIDS: Sealed bids will be received by the Administrative Services Dept Finance Division Purchasing Section of the City of Victorville, 14343 Civic Drive, Victorville, CA 92392, for furnishing all labor, services, materials, tools, equipment, supplies, transportation, utilities, and all other items and facilities necessary therefore, until **2:30 PM on Tuesday, September 22, 2015** at which time and place the bids will be publicly opened and read aloud by the City Clerk. Bids will be submitted in a sealed envelope clearly marked "Traffic signal and street improvements at Amethyst Rd at Hook Blvd " Attention: City Clerk". **Faxed bids will not be accepted.**

II. PROJECT QUESTIONS: Any prospective bidder desiring an explanation or interpretation of the solicitations, specifications, etc., must request it in writing to the Purchasing Division **by no later than 10:00 a.m.** on **September 14, 2015** in order to allow a reply to reach all prospective bidders before the submission of their bids. Oral explanations or instructions given before the award of a contract will not be binding. Any information given a prospective bidder concerning a solicitation will be furnished promptly to all prospective bidders as an amendment to the solicitation, if that information is necessary to in submitting bids or if the lack of it would be prejudicial to other prospective bidders.

III. PROPOSAL GUARANTY: Each bid must be accompanied by cash, a cashier's check, a certified check or a corporate surety bond on the form furnished by the City of Victorville, as a guarantee that the bidder will, if an award is made in accordance with the terms of this bid, promptly secure Workmen's Compensation Insurance, Liability Insurance, execute a Contract on the required form, and furnish satisfactory bonds for the Faithful performance of the contract, and for the payment of claims of material suppliers and laborers hereunder. Said proposal guaranty shall accompany and be enclosed in the same envelope with the Bid Proposal. Said proposal guaranty shall be in an amount not less than ten percent (10%) of the amount of the bid.

IV. EXECUTION OF CONTRACT: The contract shall be signed by the successful bidder and returned, together with contract bonds, copy of insurance policies, and City of Victorville business License within 10 days, not including Friday, Saturday, Sunday and legal holidays, after the bidder has received the contract for execution.

V. FAILURE TO EXECUTE CONTRACT: Failure of the lowest responsible bidder, the second lowest responsible bidder, or the third lowest responsible bidder to execute the contract and file acceptable bonds as provided herein within 10 days, not including Friday, Saturday, Sunday and legal holidays, after the bidder has received the contract for execution shall be just cause for the forfeiture of the proposal guaranty. The successful bidder may file with the City a written notice, signed by the bidder or the bidder's authorized representative, specifying that the bidder will refuse to execute the contract if it is presented. The filing of this notice shall have the same force and effect as the failure of the bidder to execute the contract and furnish acceptable bonds within the time hereinbefore prescribed.

VI. RETURN OF PROPOSAL GUARANTIES: The proposal guaranties accompanying the proposals of the first, second and third lowest responsible bidders will be retained until the contract has been finally executed, after which those proposal guaranties, except bidder's bonds and any guaranties which have been forfeited, will be returned to the respective bidders whose proposal they accompany. The proposal

guaranties, other bidders bonds, submitted by all other unsuccessful bidders will be returned upon determination, by the Authority, of the first, second and third lowest responsible bidders.

VII. BID PROPOSAL AND CONTRACT DOCUMENT: The Bid Proposal Documents and Contract Documents shall consist of the Notice Inviting Bids, Instructions to Bidders, General Requirements, Technical Requirements, Proposal Instructions, Proposal, Questionnaire, Bidder's Bond with cash, certified check, cashier's check or bond, Bid Proposal, List of Subcontractors, Non-Collusion Affidavit, Addenda Acknowledgment, Exception Form, Contract, Payment Bond, Faithful Performance Bond, and Guaranty, together with all additions, deletions, modifications, appendices, and all addenda, as prepared prior to the date of this bid opening, setting forth any modifications or interpretations of said documents, are hereby incorporated in and made a part of these Special Provisions, Proposal, and Contract.

VIII. PROHIBITED INTEREST: No member, officer, or employee of the Authority or of a local public body during his tenure or for one (1) year thereafter shall have any interest, direct or indirect, in this Contract or the proceeds thereof.

Furthermore, the parties hereto covenant and agree that to their knowledge no board member, officer, or employee of the Authority has any interest, whether contractual, non-contractual, financial, or otherwise, in this transaction or in the business of the contracting party other than the Authority, and if any such interest comes to the knowledge of either party at any time, a full and complete disclosure of such information will be made, in writing, to the other party or parties; even if such interest would not be considered conflict of interest under Article 4 (commencing with Section 1090) or Article 4.6 (commencing with Section 1120) of Division 4 of Title 1 of the Government Code of the State of California.

IX. AFFIRMATIVE ACTION: The Authority hereby notifies all bidders that it will affirmatively ensure that, in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, sex, or national origin in consideration of award.

X. CONTRACT DOCUMENTS: The Plans and Special Provisions are available at the City of Victorville's website at http://www.ci.victorville.ca.us/engineeringbids. By clicking on the link to download, potential bidders will be directed to an outside website Ebidboard. Potential bidders must register and place their name on the plan holders list to receive updates, addenda and download the project files in portable digital format (pdf).

XI. WITHDRAWAL OF PROPOSALS: Any bid may be withdrawn at any time prior to date and time indicated in Section II, "Sealed Bids" of Notice Inviting Bids only by written request for the withdrawal of the bid received by the City of Victorville, Engineering Department. The request shall be executed by the bidder or bidder's duly authorized representative.

XII. RELIEF OF BIDDERS: Attention is directed to the provisions of Public Contract Code Sections 5100 to 5107, inclusive, concerning relief of bidders and in particular to the requirement therein, that if the bidder claims a mistake was made in the bid presented, the bidder shall give the City written notice within 5 days, not including Friday, Saturday, Sunday and legal holidays, after the opening of the bids of the alleged mistake, specifying in the notice in detail how the mistake occurred.

XIII. PAYMENT: On or about the first of each calendar month, the Contractor shall request payment for the work performed prior to such date. Each payment request shall be accompanied by the updated progress schedule indicating progress achieved to that date.

Upon approval by the City Engineer, or the designee, of the Contractor's estimate of work completed, the City will make a progress payment to the Contractor equal in amount to the approved estimate less a retention of five (5) percent and less the total of all previous payments.

In preparing estimates, the material delivered on the site, preparatory work done, and the cost of bonds and

insurance paid may be taken into consideration.

The making of any payment to the Contractor under this Contract shall not relieve the Contractor of its obligation hereunder. The Contractor is obligated to complete the Contract in its entirety and to deliver to the City such completed work, finished product or structure as is specified in the Contract, at the time or times specified, and until this Contract is fully performed by the Contractor and the work, product, or structure produced thereby is accepted by the City, the Contractor shall be obligated to repair, replace, restore, or rebuild any fully or partially completed work or structure, or any materials or equipment required to be provided under the Contract which may be damaged, lost, stole, or otherwise injured in any way; provided, however, that with respect to any major unit of the type mentioned in this section, this particular obligation of the Contractor will terminate upon the completion of the Contract and acceptance by the City of such major unit, and provided further that all work, any structure, materials, and equipment covered by any partial payment is made.

When a "Notice to Withhold" is served upon the City, pursuant to the lien statutes of the State of California, to withhold sufficient funds from payments to the Contractor in support of a claim resulting from default by the Contractor in payment for labor or materials used in the execution of this Contract, the City will withhold from payments due the Contractor, an amount of money equal to the amount of the claim stated in the "Notice to Withhold," and an additional amount equal to twenty-five percent (25%) of the amount of said claim to defray any costs of litigation in the event of court action on the claim, for a total withholding of one and one-quarter (1¼) times in the stated amount of the claim.

The Contractor will be required, in requests for payment, to certify, under penalty of perjury, the following:

1. No workmen were required or permitted to work more than eight (8) hours in any one calendar day, except in cases of emergency, and except as provided by law.
2. Not less than the prevailing rates, as set forth in the Contract for this work, have been paid all laborers, workmen, and mechanics employed to perform this work.
3. There were no substitutions of subcontractors, no assignment or transference of subcontractors, except as approved by the City Engineer, or the designee.
4. All of the provisions of the Victorville Municipal Code, pertaining to non-discrimination in employment have been complied with.
5. The Record Drawings maintained on the job have been noted with all changes made subsequent to the previous request for payment.
6. The Map and Drawings have been submitted and approved by the Contractor or the Consultant, City Engineer, or the designee, as applicable.

The City shall make progress payments on any properly completed payment request submitted by the Contractor. The payment request shall not be deemed properly completed unless certified payrolls, Form WH 348, have been properly completed and submitted on a weekly basis, for each week worked or idle during the time period covered by said payment request.

If payments are to be made for materials or equipment not incorporated in the work but delivered and suitably stored at the site, or at some other location agreed upon in writing, such payments shall be conditional upon submission by the Contractor of bills of sale or such other procedures satisfactory to the City to establish the City's title to such materials or equipment or otherwise protect the City's interest, including applicable insurance and transportation to the site.

The Contractor warrants and guarantees that title to all work, materials and equipment covered by an application for payment will pass to the City of Victorville upon receipt of such payment by the Contractor, fee and clear of all liens, claims, security interests, or encumbrances - hereinafter referred to in this section as "liens"; and that no work, materials or equipment covered by a request for payment will have been acquired by the Contractor, or by any other person performing the work at the site or furnishing materials and equipment to the project.

XIV. RECYCLING, SALVAGE, AND LANDFILL DIVERSION: The City encourages innovative approaches to recycling, reuse, or salvage. The City of Victorville is mandated by the State of California to implement programs to reduce the amount of waste sent to landfill by 50% by the year 2000 and beyond.

In order to comply with this State mandate, the City requires all bidders to fill out the attached "Construction/Demolition Waste Recycling Plan" (C/DWRP). The plan outlines how the bidder will divert 50% of waste material from the landfill in order to achieve the State goal. At a minimum, bidders must divert scrap metal, concrete, and asphalt.

The CONTRACTOR will need to complete and submit the attached "Summary Waste Disposal and Diversion Report" (SWDDR). Weight slips documenting actual amounts disposed and diverted must accompany the SWDDR. The SWDDR must be completed at the conclusion of the project and must be submitted to the contract administrator before final payment will be made.

Bidders who need information on local scrap metal recyclers, asphalt and concrete recyclers, or brush and wood recyclers should contact the City of Victorville Solid Waste Manager at (760) 955-5086.

XV. BOND REQUIREMENTS: Prior to execution of the Contract, the successful bidder shall provide **one-hundred percent (100%) Faithful Performance Bond and one-hundred percent (100%) Payment Bonds** based on the bid amount accepted by the City of Victorville.

XVI. PREVAILING WAGES: The contractor and sub-contractor shall comply with all federal regulations and guidelines required in the performance of this contract. Copies of the updated Wage Determination rate are available to any interested party, by visiting www.wdol.gov. Notwithstanding anything in the Contract Documents to the contrary, Contractor shall be responsible for using up-to-date wage rates.

Revisions to the applicable Federal Wage Rates, up to 10 days before bid opening, shall be identified by the issuance of an addendum. The final contract documents signed by the local agency and the contractor, will physically include the Federal Wage Rates, or Federal Wage Rate s as revised by addendums, if any such addendums have been issued.

XVII. SENATE BILL 854 REQUIREMENTS

Senate Bill 854 established a new public works contractor registration program which collects fees to fund compliance monitoring and enforcement. All contractors and subcontractors intending to bid or perform work on public works projects will be required to register, and annually renew, online for the program. The cost to register is currently $300.00 and is a non-fundable DIR fee paid to the State. Contractors and/or subcontractors submitting bids must be registered by March 1, 2015.

No contractor or subcontractor may be listed on a bid proposal for a public works project, submitted on or after March 1, 2015, unless registered with the Department of Industrial Relations (DIR) pursuant to Labor Code section 1725.5, with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a).
No contractor or subcontractor may be awarded a contract for public work on a public works project awarded on or after April 1, 2015, unless registered with the DIR pursuant to Labor Code section 1725.5.
This project is subject to compliance monitoring and enforcement by the DIR. (www.dir.ca.gov)

XVIII. ELECTRONIC CERTIFIED PAYROLL REPORTING (eCPR): Contractors and subcontractors on all public works projects awarded on or after April 1, 2015, must use this system to furnish certified payroll records (CPRs) to the Labor Commissioner. Contractors and subcontractors who have been submitting PDF copies of their CPRs for earlier projects must also begin using the new system. For more information please go to www.dir.ca.gov under Labor Law Public Works. However, the City of Victorville would like to get copies of all payrolls in order to process the request for payment on a timely manner.

XIX. FEDERALLY FUNDED OR ASSISTED PROJECTS: State Prevailing wage rates when higher are required whenever federally funded or assisted projects are controlled or carried out by California awarding bodies of any sort. The state prevailing wage laws cannot be applied to a project, however, which is under the complete control of the federal government (8 CCR 16001(b))

XX. FEDERALLY FUNDING ACCOUNTABILITY AND TRANSPARENCY ACT: The Federal Funding Accountability and Transparency Act (FFATA) was signed on September 26, 2006. FFATA legislation requires information on federal awards be made available to public via a single, searchable website, which is www.usaspending.gov.

Contractors who are sub-awardees of federal funds in an amount greater that 25,000 are required to enter their award information on www.usaspending.gov website. This website ensures that the public can access information on all entities and organizations receiving Federal Funds.

XXI. CONTRACTOR'S LICENSE: All contractors shall be licensed in accordance with the laws of State of California, must hold a valid **Class A** license and any contractor not so licensed shall be subject to the penalties imposed by such laws. Contractor shall possess the appropriate license prior to award of Contract.

XXII. EVALUATION OF BIDS: The Authority reserves the right to accept or reject any and all bids and to award a Contract to the bidder who best meets its requirements. Relevant factors that shall be considered in evaluating the bids are: completeness and accuracy of bid; length and nature of warranties; anticipated length of life of materials; as well as the lowest and best price.

XXIII. BEGINNING OF WORK AND TIME OF COMPLETION: The Work under this contract shall be diligently prosecuted to completion before expiration of the **(100) ONE HUNDRED WORKING DAYS** beginning within fifteen calendar days after the "Notice to proceed" date.

XXIV. LIQUIDATED DAMAGES: The Contractor shall pay the City of Victorville the sum of **$500.00 per day** for each and every calendar day delay in finishing the work in excess of **(100) ONE HUNDRED WORKING DAYS** as specified above as Liquidated Damages.

XXV. ENGINEERS ESTIMATE: Engineer's Estimate is within **$300,000 -$350,000.**

XXVI. TERMINATION FOR CONVENIENCE: The City of Victorville may, by written notice, terminate this contract in whole or in part, when deemed in the City's interest. Upon termination of this contract, the City of Victorville shall only be liable for payment under the payment provisions of this contract for services rendered or supplies furnished prior to the effective date of termination.

XXVII. TERMINATION FOR DEFAULT: In the event either party fails to perform its obligations hereunder, the nondefaulting party shall provide the defaulting party written notice of such default. The defaulting party shall have ten (10) calendar days to cure the default; provided that, if the default is not reasonably susceptible to being cured within said ten (10) calendar day period, the defaulting party shall have a reasonable time to cure the default, not to exceed a maximum of thirty (30) calendar days, so long as the defaulting party commences to cure such default within ten (10) calendar days of service of such notice and diligently prosecutes the cure to completion; provided further that if the default is an immediate danger to the health, safety and general welfare, the defaulting party shall take such immediate action as may be necessary. Notwithstanding the foregoing, the nondefaulting party may, in its sole and absolute

discretion, grant a longer cure period. Should the defaulting party fail to cure the default within the time period provided in this Section, the nondefaulting party shall have the right, in addition to any other rights the nondefaulting party may have at law or in equity, to terminate this Agreement. Compliance with the provisions of this Section shall be a condition precedent to bringing any legal action, and such compliance shall not be a waiver of any party's right to take legal action in the event that the dispute is not cured.

XXVIII. DISPUTES: Any controversy or claim arising out of or relating to the provisions of this Agreement or the breach thereof shall be settled by arbitration, in accordance with the Rules of the American Arbitration Association, unless the parties agree, in writing, to some other form of alternative dispute resolution.

XXIX. ATTORNEY'S FEES: Should any litigation, specifically including but not limited to, arbitration and other non-judicial resolution of disputes be commenced between the parties to this agreement concerning this agreement or the rights and duties of either in relation thereto, the parties prevailing in such litigation or other proceeding shall be entitled, in addition to such other relief as may be granted, to a reasonable sum as and for attorney fees in such litigation where the proceeding which, if not agreed upon by the parties, shall be determined by the court or other entity in which such litigation or other proceeding is brought.

XXX INDEMNIFICATION : Notwithstanding the limits of any insurance, Contractor shall indemnify the City, it's officials, officers, agents, volunteers and employees against, and will hold and save them and each of them harmless from, any and all actions, suits, claims, damages to persons or property, losses, costs, penalties, obligations, errors, omissions or liabilities, (herein "claims or liabilities") that may be asserted or claimed by any person, firm or entity arising or alleged to arise out of or in connection with the negligent performance of the work, operations or activities of Contractor, its agents, employees, subcontractors, or invitees, provided for herein, or arising or alleged to arise from the negligent acts or omissions of Contractor hereunder, or arising or alleged to arise from Contractor's negligent performance of or failure to perform any term, provision, covenant or condition of this Agreement, but excluding such claims or liabilities or portion of such claims or liabilities arising or alleged to arise from the negligence or willful misconduct of the City its officials, officers, agents, volunteers or employees, and in connection therewith:

(a) Contractor will defend any action or actions filed in connection with any of said claims or liabilities and will pay all costs and expenses, including legal costs and attorneys' fees incurred in connection therewith;

(b) Contractor will promptly pay any judgment rendered against the City, its officials, officers, agents or employees for any such claims or liabilities arising or alleged to arise out of or in connection with Contractor's (or its agents', employees', subcontractors' or invitees') negligent performance of or failure to perform such work, operations or activities hereunder; and Contractor agrees to save and hold the City, its officials, volunteers, officers, agents, and employees harmless therefrom;

(c) In the event the City, its officials, officers, agents, volunteers or employees is made a party to any action or proceeding filed or prosecuted against Contractor for such damages or other claims arising or alleged to arise out of or in connection with the negligent performance of or failure to perform the work, operation or activities of Contractor hereunder, Contractor shall pay to the City, its officials, volunteers officers, agents or employees, any and all costs and expenses incurred by the City, its officers, agents or employees in such action or proceeding, including but not limited to, legal costs and attorneys' fees for counsel acceptable to City.

(d) Contractor's duty to defend and indemnify as set out in this Section shall include any claims, liabilities, obligations, losses, demands, actions, penalties, suits, costs, expenses or damages or injury to persons or property arising or alleged to arise from, in connection with, as a consequence of or pursuant to any state or federal law or regulation regarding hazardous substances, including but not limited to the Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA"), Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), Resource Conservation and Recovery Act of 1976 ("RCRA"), the Hazardous and Solid Waste Amendments of 1984, the Hazardous Material Transportation Act, the Toxic Substances control Act, the Clean Air Act, the Clean Water Act, the California Hazardous Substance Account Act, the California Hazardous Waste Control Law or the

Porter-Cologne Water Quality Control Act, as any of those statutes may be amended from time to time.

The Contractor's indemnification obligations pursuant to this Section shall survive the termination of this Agreement. Contractor shall require the same indemnification from all subcontractors.

XXXI. OWNERSHIP OF DOCUMENTS: All drawings, specifications, reports, records, documents and other materials prepared by Contractor, its employees, subcontractors and agents in the performance of this Agreement shall be the property of the City and shall be delivered to the City upon request of the Contract Officer or upon the termination of this Agreement, and Contractor shall have no claim for further employment or additional compensation as a result of the exercise by the City of its full rights of ownership of the documents and materials hereunder. Contractor may retain copies of such documents for its own use. Contractor shall have an unrestricted right to use the concepts embodied therein. All subcontractors shall provide for assignment to the City of any documents or materials prepared by them, and in the event Contractor fails to secure such assignment, Contractor shall indemnify the City for all damages resulting there from.

XXXII. UNFAIR BUSINESS PRACTICE CLAIMS: In entering into a public works contract or a subcontract to supply goods, services or materials pursuant to a public works contract, the Contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2, (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body renders final payment to the Contractor without further acknowledgment by the parties. (Sec. 7103.5, California Public Contract Code).

XXXIII. SEVERABILITY: In the event that any one or more of the phrases, sentences, clauses, paragraphs, or sections contained in this Agreement shall be declared invalid or unenforceable by a valid judgment or decree of a court of competent jurisdiction, such invalidity or unenforceability shall not affect any of the remaining phrases, sentences, clauses, paragraphs, or sections of this Agreement which are hereby declared as severable and shall be interpreted to carry out the intent of the parties hereunder unless the invalid provision is so material that its invalidity deprives either party of the basic benefit of their bargain or renders this Agreement meaningless.

XXXIV. WAIVER: No delay or omission in the exercise of any right or remedy by a nondefaulting party on any default shall impair such right or remedy or be construed as a waiver. A party's consent to or approval of any act by the other party requiring the party's consent or approval shall not be deemed to waive or render unnecessary the other party's consent to or approval of any subsequent act. Any waiver by either party of any default must be in writing and shall not be a waiver of any other default concerning the same or any other provision of this Agreement.

XXXV. SUBSTITUTION OF SECURITIES: Pursuant to California Public Contract Code Section 22300, substitution of eligible equivalent securities for any moneys withheld to ensure performance under the contract for the work to be performed will be permitted at the request and expense of the successful bidder.

XXXVI. APPRENTICES ON PUBLIC WORKS: The Contractor shall comply with all applicable provisions of Section 1775.5 and 1777.6 of the California Labor Code relating to employment of apprentices on public works projects. Prior to commencing work on a contract for public works, contractor shall submit contract award information to an applicable apprenticeship program that can supply apprentices to the site of the public works. Contractor and subcontractor shall provide and keep accurate payroll records and shall be available for inspection by the Labor Standards Enforcement (full texts of these codes are available at www.leginfo.ca.gov/calaw.html).

XXXVII. AWARD OF CONTRACT: The City of Victorville reserves the right to reject any and all bids and waive any irregularities or informalities in any bid or in the bidding. The City of Victorville further reserves the right to award the Contract to other than the lowest bidder if such action is deemed to be in the best interest of the City. The award of the contract, if awarded, will be made within ninety (90) calendar days after opening of the Bid Proposals. The contractor's signature on the Proposal form shall constitute a commitment on the part of the bidder to furnish the equipment as set forth in the Bid Proposal form, Notice Inviting Bids, Instructions to Bidders and the Special Provisions. The bidder to whom the contract is awarded shall be notified upon approval of the Contract by the City Council. The Notice Inviting Bids, Instructions to Bidders, Proposal, Bid Proposal form, Special Provisions, City of Victorville Standard Specifications for Public Improvements, Greenbook Standard Specifications for Public Work Construction and Standard Plans of the State of California Department of Transportation 2006 edition including all addendums, together with any plans and/or attachments, shall be considered as part of the Contract between the City and the Contractor to whom a Purchase Order is issued.

XXXVIII. PERMITS AND LICENSES

The Contractor shall obtain all necessary licenses and permits, including but not limited to a City of Victorville business license, and encroachment permits from the City for all work in the public right-of-way to accomplish the work. Contractor is responsible for obtaining all permits required for City-related projects and contracts. The Contractor shall obtain all required permits prior to commencing work and shall submit the work in progress to periodic inspection by the Development Department Inspector of the City of Victorville and shall honor all correction notices issued by same. All contacts, regarding inspections, shall be made to the Building Division of the Development Department within the City.

SECTION B

FEDERAL REQUIREMENTS

ATTACHMENT A SECTION 14. FEDERAL REQUIREMENTS FOR FEDERAL-AID CONSTRUCTION PROJECTS

GENERAL.—The work herein proposed will be financed in whole or in part with Federal funds, and therefore all of the statutes, rules and regulations promulgated by the Federal Government and applicable to work financed in whole or in part with Federal funds will apply to such work. The "Required Contract Provisions, Federal-Aid Construction Contracts, "Form FHWA 1273, are included in this Section 14. Whenever in said required contract provisions references are made to "SHA contracting officer," "SHA resident engineer," or "authorized representative of the SHA," such references shall be construed to mean "Engineer" as defined in Section 1-1.18 of the Standard Specifications.

PERFORMANCE OF PREVIOUS CONTRACT.—In addition to the provisions in Section II, "Nondiscrimination," and Section VII, "Subletting or Assigning the Contract," of the required contract provisions, the Contractor shall comply with the following:

The bidder shall execute the CERTIFICATION WITH REGARD TO THE PERFORMANCE OF PREVIOUS CONTRACTS OR SUBCONTRACTS SUBJECT TO THE EQUAL OPPORTUNITY CLAUSE AND THE FILING OF REQUIRED REPORTS located in the proposal. No request for subletting or assigning any portion of the contract in excess of $10,000 will be considered under the provisions of Section VII of the required contract provisions unless such request is accompanied by the CERTIFICATION referred to above, executed by the proposed subcontractor.

NON-COLLUSION PROVISION.—The provisions in this section are applicable to all contracts except contracts for Federal Aid Secondary projects.

Title 23, United States Code, Section 112, requires as a condition precedent to approval by the Federal Highway Administrator of the contract for this work that each bidder file a sworn statement executed by, or on behalf of, the person, firm, association, or corporation to whom such contract is to be awarded, certifying that such person, firm, association, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the submitted bid. A form to make the non-collusion affidavit statement required by Section 112 as a certification under penalty of perjury rather than as a sworn statement as permitted by 28, USC, Sec. 1746, is included in the proposal.

PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISES IN SUBCONTRACTING.—Part 26, Title 49, Code of Federal Regulations applies to this Federal-aid project. Pertinent sections of said Code are incorporated in part or in its entirety within other sections of these special provisions.

Schedule B—Information for Determining Joint Venture Eligibility

(This form need not be filled in if all joint venture firms are DBE owned.)

1. Name of joint venture _____

_____

2. Address of joint venture _____

_____

3. Phone number of joint venture _____

_____

4. Identify the firms which comprise the joint venture. (The DBE partner must complete Schedule A.) _____

_____

a. Describe the role of the DBE firm in the joint venture.

_____

b. Describe very briefly the experience and business qualifications of each non-DBE joint venturer: _____

_____

5. Nature of the joint venture's business _____

_____

6. Provide a copy of the joint venture agreement.

7. What is the claimed percentage of DBE ownership? ___

_____

8. Ownership of joint venture: (This need not be filled in if described in the joint venture agreement, provided by question 6.).

Revised 3-95
08-07-95

a. Profit and loss sharing.
b. Capital contributions, including equipment.
c. Other applicable ownership interests.

9. Control of and participation in this contract. Identify by name, race, sex, and "firm" those individuals (and their titles) who are responsible for day-to-day management and policy decision making, including, but not limited to, those with prime responsibility for:

a. Financial decisions _____

_____

b. Management decisions, such as:

1. Estimating _____

_____

2. Marketing and sales _____

_____

3. Hiring and firing of management personnel ___

_____

4. Purchasing of major items or supplies _____

_____

c. Supervision of field operations _____

_____

Note.—If, after filing this Schedule B and before the completion of the joint venture's work on the contract covered by this regulation, there is any significant change in the information submitted, the joint venture must inform the grantee, either directly or through the prime contractor if the joint venture is a subcontractor.

Affidavit

"The undersigned swear that the foregoing statements are correct and include all material information necessary to identify and explain the terms and operation of our joint venture and the intended participation by each joint venturer in the undertaking. Further, the undersigned covenant and agree to provide to grantee current, complete and accurate information regarding actual joint venture work and the payment therefor and any proposed changes in any of the joint venture arrangements and to permit the audit and examination of the books, records and files of the joint venture, or those of each joint venturer relevant to the joint venture, by authorized representatives of the grantee or the Federal funding agency. Any material misrepresentation will be grounds for terminating any contract which may be awarded and for initiating action under Federal or State laws concerning false statements."

.....	.....
Name of Firm	Name of Firm
.....	.....
Signature	Signature
.....	.....
Name	Name
.....	.....
Title	Title
.....	.....
Date	Date

Date _____

State of _____

County of _____

On this ____ day of _____, 19 __, before me appeared (Name) _____, to me personally known, who, being duly sworn, did execute the foregoing affidavit, and did state that he or she was properly authorized by (Name of firm) _____ to execute the affidavit and did so as his or her free act and deed.

Notary Public _____

Commission expires _____

[Seal]

Date _____

State of _____

County of _____

On this ___ day of _____, 19 __, before me appeared (Name) _____ to me personally known, who, being duly sworn, did execute the foregoing affidavit, and did state that he or she was properly authorized by (Name of firm) _____ to execute the affidavit and did so as his or her free act and deed.

Notary Public _____

Commission expires _____

[Seal]

Revised 3-95
08-07-95

FR-2

ATTACHMENT B REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

FHWA-1273 -- Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Nonsegregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Female and Minority Goals

To comply with Section II, "Nondiscrimination," of "Required Contract Provisions Federal-Aid Construction Contracts," the following female and minority utilization goals for Federal-aid construction contracts and subcontracts that exceed $10,000.

The nationwide goal for female utilization is 6.9 percent.

The goals for minority utilization [45 Fed Reg 65984 (10/3/1980)] are as follows:

Minority Utilization Goals

Economic Area		Goal (Percent)
174	Redding CA: Non-SMSA Counties: CA Lassen; CA Modoc; CA Plumas; CA Shasta; CA Siskiyou; CA Tehema	6.8
175	Eureka, CA Non-SMSA Counties: CA Del Norte; CA Humboldt; CA Trinity	6.6
176	San Francisco-Oakland-San Jose, CA: SMSA Counties: 7120 Salinas-Seaside-Monterey, CA CA Monterey 7360 San Francisco-Oakland CA Alameda; CA Contra Costa; CA Marin; CA San Francisco; CA San Mateo 7400 San Jose, CA CA Santa Clara, CA 7485 Santa Cruz, CA CA Santa Cruz 7500 Santa Rosa CA Sonoma 8720 Vallejo-Fairfield-Napa, CA CA Napa; CA Solano Non-SMSA Counties: CA Lake; CA Mendocino; CA San Benito	 28.9 25.6 19.6 14.9 9.1 17.1 23.2
177	Sacramento, CA: SMSA Counties: 6920 Sacramento, CA CA Placer; CA Sacramento; CA Yolo Non-SMSA Counties CA Butte; CA Colusa; CA El Dorado; CA Glenn; CA Nevada; CA Sierra; CA Sutter; CA Yuba	 16.1 14.3
178	Stockton-Modesto, CA: SMSA Counties: 5170 Modesto, CA CA Stanislaus 8120 Stockton, CA CA San Joaquin Non-SMSA Counties CA Alpine; CA Amador; CA Calaveras; CA Mariposa; CA Merced; CA Toulumne	 12.3 24.3 19.8
179	Fresno-Bakersfield, CA SMSA Counties: 0680 Bakersfield, CA CA Kern 2840 Fresno, CA CA Fresno Non-SMSA Counties:	 19.1 26.1 23.6

	CA Kings; CA Madera; CA Tulare	
180	Los Angeles, CA: SMSA Counties: 0360 Anaheim-Santa Ana-Garden Grove, CA CA Orange 4480 Los Angeles-Long Beach, CA CA Los Angeles 6000 Oxnard-Simi Valley-Ventura, CA CA Ventura 6780 Riverside-San Bernardino-Ontario, CA CA Riverside; CA San Bernardino 7480 Santa Barbara-Santa Maria-Lompoc, CA CA Santa Barbara Non-SMSA Counties CA Inyo; CA Mono; CA San Luis Obispo	 11.9 28.3 21.5 19.0 19.7 24.6
181	San Diego, CA: SMSA Counties 7320 San Diego, CA CA San Diego Non-SMSA Counties CA Imperial	 16.9 18.2

For each July during which work is performed under the contract, you and each non-material-supplier subcontractor with a subcontract of $10,000 or more must complete Form FHWA PR-1391 (Appendix C to 23 CFR 230). Submit the forms by August 15.

Training

This section applies if a number of trainees or apprentices is specified in the special provisions.
As part of your equal opportunity affirmative action program, provide on-the-job training to develop full journeymen in the types of trades or job classifications involved.
You have primary responsibility for meeting this training requirement.
If you subcontract a contract part, determine how many trainees or apprentices are to be trained by the subcontractor.
Include these training requirements in your subcontract.
Where feasible, 25 percent of apprentices or trainees in each occupation must be in their 1st year of apprenticeship or training.
Distribute the number of apprentices or trainees among the work classifications on the basis of your needs and the availability of journeymen in the various classifications within a reasonable recruitment area.
Before starting work, submit to the City/County of _____:

1. Number of apprentices or trainees to be trained for each classification
2. Training program to be used
3. Training starting date for each classification

Obtain the City/County of _____'s approval for this submitted information before you start work. The City/County of _____ credits you for each apprentice or trainee you employ on the work who is currently enrolled or becomes enrolled in an approved program.
The primary objective of this section is to train and upgrade minorities and women toward journeymen status. Make every effort to enroll minority and women apprentices or trainees, such as conducting systematic and direct recruitment through public and private sources likely to yield minority and women apprentices or trainees, to the extent they are available within a reasonable recruitment area. Show that you have made the efforts. In making these efforts, do not discriminate against any applicant for training.
Do not employ as an apprentice or trainee an employee:

1. In any classification in which the employee has successfully completed a training course leading to journeyman status or in which the employee has been employed as a journeyman
2. Who is not registered in a program approved by the US Department of Labor, Bureau of Apprenticeship and Training

Ask the employee if the employee has successfully completed a training course leading to journeyman status or has been employed as a journeyman. Your records must show the employee's answers to the questions.
In your training program, establish the minimum length and training type for each classification. The City/County of _____ and FHWA approves a program if one of the following is met:

1. It is calculated to:

    1.1. Meet the your equal employment opportunity responsibilities
    1.2. Qualify the average apprentice or trainee for journeyman status in the classification involved by the end of the training period

2. It is registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training and it is administered in a way consistent with the equal employment responsibilities of federal-aid highway construction contracts

Obtain the State's approval for your training program before you start work involving the classification covered by the program.
Provide training in the construction crafts, not in clerk-typist or secretarial-type positions. Training is allowed in lower level management positions such as office engineers, estimators, and timekeepers if the training is oriented toward construction applications. Training is allowed in the laborer classification if significant and meaningful training is provided and approved by the division office. Off-site training is allowed if the training is an integral part of an approved training program and does not make up a significant part of the overall training.
The City/County of _____ reimburses you 80 cents per hour of training given an employee on this contract under an approved training program:

1. For on-site training
2. For off-site training if the apprentice or trainee is currently employed on a federal-aid project and you do at least one of the following:

    2.1. Contribute to the cost of the training
    2.2. Provide the instruction to the apprentice or trainee
    2.3. Pay the apprentice's or trainee's wages during the off-site training period

3. If you comply with this section.

Each apprentice or trainee must:

1. Begin training on the project as soon as feasible after the start of work involving the apprentice's or trainee's skill
2. Remain on the project as long as training opportunities exist in the apprentice's or trainee's work classification or until the apprentice or trainee has completed the training program

Furnish the apprentice or trainee:

1. Copy of the program you will comply with in providing the training
2. Certification showing the type and length of training satisfactorily completed

Maintain records and submit reports documenting your performance under this section.

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(THE BIDDER'S EXECUTION ON THE SIGNATURE PORTION OF THIS PROPOSAL SHALL ALSO CONSTITUTE AN ENDORSEMENT AND EXECUTION OF THOSE CERTIFICATIONS WHICH ARE A PART OF THIS PROPOSAL)

ATTACHMENT C EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

The bidder_____, proposed subcontractor _____, hereby certifies that he has_____, has not___, participated in a previous contract or subcontract subject to the equal opportunity clauses, as required by Executive Orders 10925, 11114, or 11246, and that, where required, he has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filling requirements.

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts, which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of $10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

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ATTACHMENT D NONCOLLUSION AFFIDAVIT

(Title 23 United States Code Section 112 and
Public Contract Code Section 7106)

To the CITY / COUNTY of _____
DEPARTMENT OF PUBLIC WORKS.

In accordance with Title 23 United States Code Section 112 and Public Contract Code 7106 the bidder declares that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Note: The above Noncollusion Affidavit is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Noncollusion Affidavit.
Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

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ATTACHMENT E DEBARMENT AND SUSPENSION CERTIFICATION

TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29

The bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, and manager:

- Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency;
- Has not been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past 3 years;
- Does not have a proposed debarment pending; and
- Has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions.
The above certification is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Certification.

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ATTACHMENT F NONLOBBYING CERTIFICATION FOR FEDERAL-AID CONTRACTS

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

(l) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such sub recipients shall certify and disclose accordingly.

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ATTACHMENT G DISCLOSURE OF LOBBYING ACTIVITIES

COMPLETE THIS FORM TO DISCLOSE LOBBYING ACTIVITIES PURSUANT TO 31 U.S.C. 1352

1. Type of Federal Action:
☐ a. contract
b. grant
c. cooperative agreement
d. loan
e. loan guarantee
f. loan insurance

2. Status of Federal Action:
☐ a. bid/offer/application
b. initial award
c. post-award

3. Report Type:
☐ a. initial
b. material change

For Material Change Only:
year ____ quarter _____
date of last report _____

4. Name and Address of Reporting Entity

☐ Prime ☐ Subawardee
Tier _____ , if known

Congressional District, if known

5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:

Congressional District, if known

6. Federal Department/Agency:

7. Federal Program Name/Description:

CFDA Number, if applicable _____

8. Federal Action Number, if known:

9. Award Amount, if known:

10. a. Name and Address of Lobby Entity
(If individual, last name, first name, MI)

b. Individuals Performing Services (including address if different from No. 10a)
(last name, first name, MI)

(attach Continuation Sheet(s) if necessary)

11. Amount of Payment (check all that apply)
$ _____ ☐ actual planned

12. Form of Payment (check all that apply):
☐ a. cash
☐ b. in-kind; specify: nature _____
value _____

13. Type of Payment (check all that apply)
☐ a. retainer
☐ b. one-time fee
☐ c. commission
☐ d. contingent fee
☐ e deferred
☐ f. other, specify _____

14. Brief Description of Services Performed or to be performed and Date(s) of Service, including officer(s), employee(s), or member(s) contacted, for Payment Indicated in Item 11:

(attach Continuation Sheet(s) if necessary)

15. Continuation Sheet(s) attached: **Yes** ☐ **No** ☐

16. Information requested through this form is authorized by Title 31 U.S.C. Section 1352. This disclosure of lobbying reliance was placed by the tier above when his transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to Congress semiannually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature: _____

Print Name: _____

Title: _____

Telephone No.: _____ Date: _____

Authorized for Local Reproduction
Standard Form - LLL

Federal Use Only:

Standard Form LLL Rev. 09-12-97

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime federal recipient, at the initiation or receipt of covered federal action or a material change to previous filing pursuant to title 31 U.S.C. Section 1352. The filing of a form is required for such payment or agreement to make payment to lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress an officer or employee of Congress or an employee of a Member of Congress in connection with a covered federal action. Attach a continuation sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered federal action for which lobbying activity is and/or has been secured to influence, the outcome of a covered federal action.
2. Identify the status of the covered federal action.
3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last, previously submitted report by this reporting entity for this covered federal action.
4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District if known. Check the appropriate classification of the reporting entity that designates if it is or expects to be a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the first tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in Item 4 checks "Subawardee" then enter the full name, address, city, State and zip code of the prime federal recipient. Include Congressional District, if known.
6. Enter the name of the federal agency making the award or loan commitment. Include at least one organization level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the federal program name or description for the covered federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans and loan commitments.
8. Enter the most appropriate federal identifying number available for the federal action identification in item 1 (e.g., Request for Proposal (RFP) number, Invitation for Bid (IFB) number, grant announcement number, the contract grant. or loan award number, the application/proposal control number assigned by the federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered federal action where there has been an award or loan commitment by the Federal agency, enter the federal amount of the award/loan commitments for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, State and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influenced the covered federal action.
    (b) Enter the full names of the individual(s) performing services and include full address if different from 10 (a). Enter Last Name, First Name and Middle Initial (Ml).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.

14. Provide a specific and detailed description of the services that the lobbyist has performed or will be expected to perform and the date(s) of any services rendered. Include all preparatory and related activity not just time spent in actual contact with federal officials. Identify the federal officer(s) or employee(s) contacted or the officer(s) employee(s) or Member(s) of Congress that were contacted.
15. Check whether or not a continuation sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name title and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, D.C. 20503.
SF-LLL-Instructions Rev. 06-04-90«ENDIF»

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ATTACHMENT H SECTION 2. PROPOSAL REQUIREMENTS AND CONDITIONS

2-1.01 GENERAL

The bidder's attention is directed to the provisions in Section 2, "Proposal Requirements and Conditions," of the Standard Specifications and these special provisions for the requirements and conditions which the bidder must observe in the preparation of and the submission of the bid.

The bidder's bond shall conform to the bond form in the Bid book for the project and shall be properly filled out and executed. The bidder's bond form included in that book may be used.

In conformance with Public Contract Code Section 7106, a Noncollusion Affidavit is included in the Bid book. Signing the Bid book shall also constitute signature of the Noncollusion Affidavit.

The Contractor, sub-recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of Title 49 CFR (Code of Federal Regulations), Part 26 in the award and administration of US DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the recipient deems appropriate. Each subcontract signed by the bidder must include this assurance.

Failure of the bidder to fulfill the requirements of the Special Provisions for submittals required to be furnished after bid opening, including but not limited to escrowed bid documents, where applicable, may subject the bidder to a determination of the bidder's responsibility in the event it is the apparent low bidder on a future public works contracts.

2-1.015--FEDERAL LOBBYING RESTRICTIONS.--Section 1352, Title 31, United States Code prohibits Federal funds from being expended by the recipient or any lower-tier sub-recipient of a Federal-aid contract to pay for any person for influencing or attempting to influence a Federal agency or Congress in connection with the awarding of any Federal-aid contract, the making of any Federal grant or loan, or the entering into of any cooperative agreement.

If any funds other than Federal funds have been paid for the same purposes in connection with this Federal-aid contract, the recipient shall submit an executed certification and, if required, submit a completed disclosure form as part of the bid documents.

A certification for Federal-aid contracts regarding payment of funds to lobby Congress or a Federal agency is included in the Bid book. Standard Form - LLL, "Disclosure of Lobbying Activities," with instructions for completion of the Standard Form is also included in the Bid book. Signing the Bid book shall constitute signature of the Certification.

The above referenced certification and disclosure of lobbying activities shall be included in each subcontract and any lower-tier contracts exceeding $100,000. All disclosure forms, but not certifications, shall be forwarded from tier to tier until received by the Engineer.

The Contractor, subcontractors and any lower-tier contractors shall file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed by the Contractor, subcontractors and any lower-tier contractors. An event that materially affects the accuracy of the information reported includes:

(1) A cumulative increase if $25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered federal action; or

(2) A change in the person(s) or individual(s) influencing or attempting to influence a covered federal action; or

(3) A change in the officer(s), employees(s), or member(s) contacted to influence or attempt to influence a covered Federal Action.

2-1.02 DISADVANTAGED BUSINESS ENTERPRISE (DBE).—This project is subject to Title 49 CFR 26.13(b):

> The Contractor, sub-recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR, Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

Take necessary and reasonable steps to ensure that DBEs have opportunity to participate in the contract (49 CFR 26).

To ensure there is equal participation of the DBE groups specified in 49 CFR 26.5, the Agency specifies a goal for Disadvantaged Business Enterprises (DBEs). DBE is a firm that meets the definition of DBE.

Make work available to DBEs and select work parts consistent with available DBE subcontractors and suppliers.

Meet the DBE goal shown in the Notice to Bidders or demonstrate that you made adequate good faith efforts to meet this goal.

It is your responsibility to verify that the DBE firm is certified as DBE at date of bid opening. For a list of DBEs certified by the California Unified Certification Program, go to:

http://www.dot.ca.gov/hq/bep/find_certified.htm

All DBE participation will count toward the California Department of Transportation's federally mandated statewide overall DBE goal.

Credit for materials or supplies you purchase from DBEs counts towards the goal in the following manner:

1. 100 percent counts if the materials or supplies are obtained from a DBE manufacturer.
2. 60 percent counts if the materials or supplies are obtained from a DBE regular dealer.
3. Only fees, commissions, and charges for assistance in the procurement and delivery of materials or supplies count if obtained from a DBE that is neither a manufacturer, nor a regular dealer. 49 CFR 26.55 defines "manufacturer" and "regular dealer."

You receive credit towards the goal if you employ a DBE trucking company that performs a commercially useful function as defined in 49 CFR 26.55.

DBE Commitment Submittal

Submit DBE information on the Local Agency Bidder DBE Commitment (Construction Contracts), Exhibit 15-G form, included in the Bid book. If the form is not submitted with the bid, remove the form from the Bid book before submitting your bid.

If the DBE Commitment form is not submitted with the bid, the apparent low bidder, the 2nd low bidder, and the 3rd low bidder must complete and submit the DBE Commitment form to the Agency. DBE Commitment form must be received by the Agency no later than 4:00 p.m. on the 4th business day after bid opening.

Other bidders do not need to submit the DBE Commitment form unless the Agency requests it. If the Agency requests you to submit a DBE Commitment form, submit the completed form within 4 business days of the request.

Submit written confirmation from each DBE stating that it is participating in the contract. Include confirmation with the DBE Commitment form. A copy of a DBE's quote will serve as written confirmation that the DBE is participating in the contract.

If you do not submit the DBE Commitment form within the specified time, the Agency finds your bid nonresponsive.

Good Faith Efforts Submittal

If you have not met the DBE goal, complete and submit the DBE Information - Good Faith Efforts, Exhibit 15-H form with the bid showing that you made adequate good faith efforts to meet the goal. Only good faith efforts directed towards obtaining participation by DBEs will be considered. If good faith efforts documentation is not submitted with the bid, it must be received by the Agency no later than 4:00 p.m. on the 4th business day after bid opening.

If your DBE Commitment form shows that you have met the DBE goal or if you are required to submit the DBE Commitment form, you must also submit good faith efforts documentation within the specified time to protect your eligibility for award of the contract in the event the Agency finds that the DBE goal has not been met.

Good faith efforts documentation must include the following information and supporting documents, as necessary:

1. Items of work you have made available to DBE firms. Identify those items of work you might otherwise perform with its own forces and those items that have been broken down into economically feasible units to facilitate DBE participation. For each item listed, show the dollar value and percentage of the total contract. It is your responsibility to demonstrate that sufficient work to meet the goal was made available to DBE firms.
2. Names of certified DBEs and dates on which they were solicited to bid on the project. Include the items of work offered. Describe the methods used for following up initial solicitations to determine with certainty if the DBEs were interested, and the dates of the follow-up. Attach supporting documents such as copies of letters, memos, facsimiles sent, telephone logs, telephone billing statements, and other evidence of solicitation. You are reminded to solicit certified DBEs through all reasonable and available means and provide sufficient time to allow DBEs to respond.
3. Name of selected firm and its status as a DBE for each item of work made available. Include name, address, and telephone number of each DBE that provided a quote and their price quote. If the firm selected for the item is not a DBE, provide the reasons for the selection.
4. Name and date of each publication in which you requested DBE participation for the project. Attach copies of the published advertisements.
5. Names of agencies and dates on which they were contacted to provide assistance in contacting, recruiting, and using DBE firms. If the agencies were contacted in writing, provide copies of supporting documents.
6. List of efforts made to provide interested DBEs with adequate information about the plans, specifications, and requirements of the contract to assist them in responding to a solicitation. If you have provided information, identify the name of the DBE assisted, the nature of the information provided, and date of contact. Provide copies of supporting documents, as appropriate.
7. List of efforts made to assist interested DBEs in obtaining bonding, lines of credit, insurance, necessary equipment, supplies, and materials, excluding supplies and equipment that the DBE subcontractor purchases or leases from the prime contractor or its affiliate. If such assistance is provided by you, identify the name of the DBE assisted, nature of the assistance offered, and date. Provide copies of supporting documents, as appropriate.
8. Any additional data to support demonstration of good faith efforts.

The agency may consider DBE commitments of the 2nd and 3rd bidders when determining whether the low bidder made good faith efforts to meet the goal.

ATTACHMENT I

SECTION 3. AWARD AND EXECUTION OF CONTRACT

The bidder's attention is directed to the provisions in Section 3, "Award and Execution of Contract," of the Standard Specifications and these special provisions for the requirements and conditions concerning award and execution of contract.

Bid protests are to be delivered to the following address: **City of Victorville**

The award of the contract, if it be awarded, will be to the lowest responsible bidder whose bid complies with all the requirements prescribed.

The contract shall be executed by the successful bidder and shall be returned together with the contract bonds, to the Agency so that it is received within 10 days, not including Saturdays, Sundays and legal holidays, after the bidder has received the contract for execution. Failure to do so shall be just cause for forfeiture of the proposal guaranty. The executed contract documents shall be delivered to the following address: **[Agency to provide detailed information if this paragraph is used]**

SECTION 4. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

Attention is directed to the provisions in Section 8-1.03, "Beginning of Work" in Section 8-1.06 "Time of Completion," and in Section 8-1.07, "Liquidated Damages," of the Standard Specifications and these special provisions.

The Contractor shall begin work within 15 calendar days after the contract has been approved by the attorney appointed and authorized to represent the City/County of _____.

This work shall be diligently prosecuted to completion before the expiration of_____WORKING DAYS beginning on the 15 calendar day after approval of the contract.

(INSERT AMOUNT OF LIQUIDATED DAMAGES)

The Contractor shall pay to the City/County of _____ the sum of $ _____ per day, for each and every calendar day's delay in finishing the work in excess of the number of working days prescribed above.

Liquidated Damages

Liquidated Damages are based on the estimated cost of field construction engineering. In special cases, liquidated damages greater than the estimated field construction engineering cost may be specified, provided detailed reasons are given to support the greater amount. In every case, show the calculations that support the recommended rate. Liquidated damages are not to be used as disincentives to encourage timely completion.

Use the following formula for highway construction projects to avoid excessive liquidated damages:

$$\frac{L\% \text{ (See Table below)} \times \text{Engineer's Estimate} + \text{RE Office Expenses } *}{\text{Working Days } **} = \text{Liq Dam/calendar day}$$

* Resident Engineer office expenses over the life of the contract should be added unless the cost is already included in the Engineer's Estimate.

** Working days used to calculate liquidated damages should not include water pollution establishment or plant establishment days.

LIQUIDATED DAMAGES TABLE (L%)

Project Estimate	Project Type					
	Resurfacing*/Rehab	New Highway	Realignment/ Widening	Landscaping	Soundwall	Others
Over $30 million	10 %	10 %	13%	15 %	15 %	15 %
$10 million to $30 million	10 %	12 %	15 %	15 %	15 %	15 %
$5 million to $10 million	10 %	15 %	15 %	15 %	15 %	15 %
$750k to $5 million	15 %	15%	15 %	18 %	18 %	15 %
Less Than $750k	15 %	20 %	20 %	18 %	20 %	15 %

* Resurfacing projects include AC Surfacing, seal coats, slurry seals, and so on.

The calculated liquidated damages should be rounded up in $100 increments to determine the amount to be specified.

ATTACHMENT J SUBCONTRACTOR AND DBE RECORDS

Required for ALL construction contracts administered under the Caltrans Standard Specifications

5-1.__ SUBCONTRACTOR AND DBE RECORDS

Use each DBE subcontractor as listed on the List of Subcontractors form and the Local Agency Bidder DBE Commitment (Construction Contracts), Exhibit 15-G, forms unless you receive authorization for a substitution. The Agency requests the Contractor to:

1. Notify the Engineer of any changes to its anticipated DBE participation
2. Provide this notification before starting the affected work

Maintain records including:

1. Name and business address of each 1st-tier subcontractor
2. Name and business address of each DBE subcontractor, DBE vendor, and DBE trucking company, regardless of tier
3. Date of payment and total amount paid to each business

If you are a DBE contractor, include the date of work performed by your own forces and the corresponding value of the work.
Before the 15th of each month, submit a Monthly DBE Trucking Verification form.

If a DBE is decertified before completing its work, the DBE must notify you in writing of the decertification date. If a business becomes a certified DBE before completing its work, the business must notify you in writing of the certification date. Submit the notifications. On work completion, complete a Disadvantaged Business Enterprises (DBE) Certification Status Change, Exhibit 17-O, form. Submit the form within 30 days of contract acceptance.

Upon work completion, complete a Final Report – Utilization of Disadvantaged Business Enterprises (DBE), First-Tier Subcontractors, Exhibit 17-F, form. Submit it within 90 days of contract acceptance. The Agency withholds $10,000 until the form is submitted. The Agency releases the withhold upon submission of the completed form.

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ATTACHMENT K PERFORMANCE OF SUBCONTRACTORS

5-1.__ PERFORMANCE OF SUBCONTRACTORS

DBEs must perform work or supply materials as listed in the Local Agency Bidder DBE Commitment (Construction Contracts), Exhibit 15-G, included in the Bid.
Do not terminate or substitute a listed DBE for convenience and perform the work with your own forces or obtain materials from other sources without authorization from the Agency.
The Agency authorizes a request to use other forces or sources of materials if it shows any of the following justifications:

1. Listed DBE fails or refuses to execute a written contract based on plans and specifications for the project.
2. You stipulated that a bond is a condition of executing the subcontract and the listed DBE fails to meet your bond requirements.
3. Work requires a contractor's license and listed DBE does not have a valid license under Contractors License Law.
4. Listed DBE fails or refuses to perform the work or furnish the listed materials.
5. Listed DBE's work is unsatisfactory and not in compliance with the contract.
6. Listed DBE is ineligible to work on the project because of suspension or debarment.
7. Listed DBE becomes bankrupt or insolvent.
8. Listed DBE voluntarily withdraws with written notice from the Contract
9. Listed DBE is ineligible to receive credit for the type of work required.
10. Listed DBE owner dies or becomes disabled resulting in the inability to perform the work on the Contract.
11. Agency determines other documented good cause.

Notify the original DBE of your intent to use other forces or material sources and provide the reasons. Provide the DBE with 5 days to respond to your notice and advise you and the Agency of the reasons why the use of other forces or sources of materials should not occur. Your request to use other forces or material sources must include:

1. 1 or more of the reasons listed in the preceding paragraph
2. Notices from you to the DBE regarding the request
3. Notices from the DBEs to you regarding the request

If a listed DBE is terminated, make good faith efforts to find another DBE to substitute for the original DBE. The substitute DBE must perform at least the same amount of work as the original DBE under the contract to the extent needed to meet the DBE goal.

The substitute DBE must be certified as a DBE at the time of request for substitution.
Unless the Agency authorizes (1) a request to use other forces or sources of materials or (2) a good faith effort for a substitution of a terminated DBE, the Agency does not pay for work listed on the Local Agency Bidder DBE Commitment (Construction Contracts), Exhibit 15-G, form unless it is performed or supplied by the listed DBE or an authorized substitute.

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ATTACHMENT L SUBCONTRACTING

5-1.__ SUBCONTRACTING

No subcontract releases the Contractor from the contract or relieves the Contractor of their responsibility for a subcontractor's work.

If the Contractor violates Pub Cont Code § 4100 et seq., the City of Victorville may exercise the remedies provided under Pub Cont Code § 4110. The City of Victorville may refer the violation to the Contractors State License Board as provided under Pub Cont Code § 4111.

The Contractor shall perform work equaling at least 30 percent of the value of the original total bid with the Contractor's own employees and equipment, owned or rented, with or without operators.

Each subcontract must comply with the contract.

Each subcontractor must have an active and valid State contractor's license with a classification appropriate for the work to be performed (Bus & Prof Code, § 7000 et seq.).

Submit copies of subcontracts upon request by the Engineer.

Before subcontracted work starts, submit a Subcontracting Request form.

Do not use a debarred contractor; a current list of debarred contractors is available at the Department of Industrial Relations web site at: http://www.dir.ca.gov/dlse/debar.html

Upon request by the Engineer, immediately remove and not again use a subcontractor who fails to prosecute the work satisfactorily.

Each subcontract and any lower-tier subcontract that may in turn be made shall include the "Required Contract Provisions Federal-Aid Construction Contracts" in Section 14 of these special provisions. Noncompliance shall be corrected. Payment for subcontracted work involved will be withheld from progress payments due or to become due, until correction is made. Failure to comply may result in termination of the contract.

5-1.__ PROMPT PROGRESS PAYMENT TO SUBCONTRACTORS

A prime contractor or subcontractor shall pay any subcontractor not later than 10 days of receipt of each progress payment in accordance with the provision in Section 7108.5 of the California Business and Professions Code concerning prompt payment to subcontractors. The 10 days is applicable unless a longer period is agreed to in writing. Any delay or postponement of payment over 30 days may take place only for good cause and with the agency's prior written approval. Any violation of Section 7108.5 shall subject the violating contractor or subcontractor to the penalties, sanctions and other remedies of that section. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the prime contractor, deficient subcontract performance, or noncompliance by a subcontractor.

5-1._ PROMPT PAYMENT OF FUNDS WITHHELD TO SUBCONTRACTORS

The local agency must include one of the following three provisions (if using *Caltrans Standard Specification*, modify or delete paragraphs 9-1.06 and 9-1.065) to ensure prompt and full payment of any retainage from the prime contractor, or subcontractor to a subcontractor.

(EITHER)

No retainage will be withheld by the agency from progress payments due the prime contractor. Retainage by the prime contractor or subcontractors is prohibited and no retainage will be held by the prime contractor from progress due subcontractors. Any violation of this provision shall subject the violating prime contractor or subcontractor to the penalties, sanctions and other remedies specified in Section 7108.5 of the California Business and Professions Code. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the prime contractor or subcontractor, in the event of a dispute involving late payment or nonpayment by the prime contractor, deficient subcontract performance or noncompliance by a subcontractor.

(OR)

No retainage will be held by the agency from progress payments due the prime contractor. Any retainage held by the prime contractors or subcontractors from progress payments due subcontractors shall be promptly paid in full to subcontractors within 30 days after the subcontractor's work is satisfactorily completed. Federal law (49 CFR 26.29) requires that any delay or postponement of payment over the 30 days may take place only for good cause and with the agency's prior written approval. Any violation of this provision shall subject the violating prime contractor or subcontractor to the penalties, sanctions and other remedies specified in Section 7108.5 of the Business and Professions Code. These requirements shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the prime contractor or subcontractor, in the event of a dispute involving late payment or nonpayment by the prime contractor, deficient subcontract performance or noncompliance by a subcontractor.

(OR)

The agency shall hold retainage from the prime contractor and shall make prompt and regular incremental acceptances of portions, as determined by the agency, of the contract work and pay retainage to the prime contractor based on these acceptances. The prime contractor or subcontractor shall return all monies withheld in retention from a subcontractor within 30 days after receiving payment for work satisfactorily completed and accepted including incremental acceptances of portions of the contract work by the agency. Federal law (49 CFR 26.29) requires that any delay or postponement of payment over 30 days may take place only for good cause and with the agency's prior written approval. Any violation of this provision shall subject the violating prime contractor or subcontractor to the penalties, sanctions and other remedies specified in Section 7108.5 of the Business and Professions Code. These requirements shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the prime contractor or subcontractor, in the event of a dispute involving late payment or nonpayment by the prime contractor, deficient subcontract performance or noncompliance by a subcontractor.

ATTACHMENT M BUY AMERICA REQUIREMENTS

5-1.__ BUY AMERICA REQUIREMENTS. -- Attention is directed to the "Buy America" requirements of the Title 23 United States Code, Section 313 and the regulations adopted pursuant thereto. In accordance with said law and regulations, all manufacturing processes for steel and iron materials furnished for incorporation into the work on this project shall occur in the United States; with the exception that pig iron and processed, pelletized and reduced iron ore manufactured outside of the United States may be used in the domestic manufacturing process for such steel and iron materials. The application of coatings, such as epoxy coating, galvanizing, painting, and any other coating that protects or enhances the value of such steel or iron materials shall be considered a manufacturing process subject to the "Buy America" requirements.

A Certificate of Compliance, conforming to the provisions in Section 6-1.07, Certificates of Compliance, of the Standard Specifications, shall be furnished for steel and iron materials. The certificates, in addition to certifying that the materials comply with the specifications, shall also specifically certify that all manufacturing processes for the materials occurred in the United States, except for the exceptions allowed herein. The requirements imposed by said law and regulations do not prevent a minimal use of foreign steel and iron materials if the total combined cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract cost or $2,500, whichever is greater. The Contractor shall furnish the Engineer acceptable documentation of the quantity and value of any foreign steel and iron prior to incorporating such materials into the work.

EXHIBIT 15-G2 LOCAL AGENCY BIDDER DBE INFORMATION (CONSTRUCTION CONTRACTS)

(Inclusive of all DBEs including the UDBEs listed at bid proposal)

NOTE: PLEASE REFER TO INSTRUCTIONS ON THE REVERSE SIDE OF THIS FORM

LOCAL AGENCY: _____ LOCATION: _____

PROJECT DESCRIPTION: _____

TOTAL CONTRACT AMOUNT: $_____

BID DATE: _____

BIDDER'S NAME: _____

CONTRACT UDBE GOAL: _____

CONTRACT ITEM NO.	ITEM OF WORK AND DESCRIPTION OR SERVICES TO BE SUBCONTRACTED OR MATERIALS TO BE PROVIDED (or contracted if the bidder is a DBE)	DBE CERT NO. AND EXPIRATION DATE	NAME OF EACH DBE (Must be certified on the date bids are opened - include DBE address and phone number)	DOLLAR AMOUNT DBE

For Local Agency to Complete:

Local Agency Contract Number: _____

Federal-aid Project Number: _____

Federal Share: _____

Contract Award Date: _____

Local Agency certifies that all DBE certification have been verified and Information is complete and accurate.

_____ _____ _____

Print Name Signature Date

Local Agency Representative

(Area Code) Telephone Number: _____

Total Claimed DBE Participation

$ _____

_____%

_____

Signature of Bidder

_____

Date (Area Code) Tel. No.

_____

Person to Contact (Please Type or Print)

For Caltrans Review:

_____ _____ _____

Print Name Signature Date

Caltrans District Local Assistance Engineer

Local Agency Bidder DBE Information (Construction Contarcts)
(Rev 6/26/09)

Distribution: (1) Copy – Fax or scan a copy to the Caltrans District Local Assistance Engineer (DLAE) within 15 days of contract execution. Failure to send a copy to the DLAE within 15 days of contract execution may result in de-obligation of funds for this project.
(2) Copy – Include in award package to Caltrans District Local Assistance
(3) Original – Local agency files

INSTRUCTIONS - LOCAL AGENCY BIDDER DBE INFORMATION (CONSTRUCTION CONTRACTS)

SUCCESSFUL BIDDER:

The form requires specific information regarding the construction contract: Local Agency, Location, Project Description, Total Contract Amount, Bid Date, Bidder's Name, and Contract UDBE Goal.

The form has a column for the Contract Item Number and Item of Work and Description or Services to be Subcontracted or Materials to be provided by DBEs. Prime contractors shall indicate all work to be performed by DBEs including work performed by its own forces, if a DBE.The DBE shall provide a certification number to the Contractor and expiration date. Enter DBE prime and subcontractors certification number. The DBE contractors should notify the Contractor in writing with the date of the decertification if their status should change during the course of the contract. The form has a column for the Names of DBE certified contractors to perform the work (must be certified on the date bids are opened and include DBE address and phone number.

IMPORTANT: Identify **all** DBE firms participating in the project--including all UDBEs listed on the UDBE Commitment form (Exhibit 15-G1), regardless of tier. Names of the First-Tier DBE subcontractors and their respective item(s) of work listed should be consistent, where applicable, with the names and items of work in the "List of Subcontractors" submitted with your bid.

There is a column for the DBE participation dollar amount. Enter the Total Claimed DBE Participation dollars and percentage amount of items of work submitted with your bid pursuant to the Special Provisions. (If 100% of item is not to be performed or furnished by the DBE, describe exact portion of time to be performed or furnished by the DBE.) See Section "Disadvantaged Business Enterprise (DBE)," of the Special Provisions (construction contracts) to determine how to count the participation of DBE firms.

Exhibit 15-G2 must be signed and dated by the successful bidder. Also list a phone number in the space provided and print the name of the person to contact.

Local agencies should complete the Local Agency Contract Number, Federal-aid Project Number, Federal Share, Contract Award Date fields and verify that all information is complete and accurate before signing and sending a copy of the form to the District Local Assistance Engineer within 15 days of contract execution. Failure to submit a completed and accurate form within the 15-day time period may result in the de-obligation of funds on this project.

District DBE Coordinator should verify that all informations is complete and accurate. Once the information has been verified, the **District Local Assistance Engineer** signs and dates the form.

EXHIBIT 15-H DBE INFORMATION —GOOD FAITH EFFORTS

DBE INFORMATION - GOOD FAITH EFFORTS

Federal-aid Project No. _____ Bid Opening Date _____

The _____(City/County of)_____established a Disadvantaged Business Enterprise (DBE) goal of _____% for this project. The information provided herein shows that a good faith effort was made.

Lowest, second lowest and third lowest bidders shall submit the following information to document adequate good faith efforts. Bidders should submit the following information even if the "Local Agency Bidder DBE Commitment" form indicates that the bidder has met the DBE goal. This will protect the bidder's eligibility for award of the contract if the administering agency determines that the bidder failed to meet the goal for various reasons, e.g., a DBE firm was not certified at bid opening, or the bidder made a mathematical error.

Submittal of only the "Local Agency Bidder DBE Commitment" form may not provide sufficient documentation to demonstrate that adequate good faith efforts were made.

The following items are listed in the Section entitled "Submission of DBE Commitment" of the Special Provisions:

A. The names and dates of each publication in which a request for DBE participation for this project was placed by the bidder (please attach copies of advertisements or proofs of publication):

Publications	Dates of Advertisement

B. The names and dates of written notices sent to certified DBEs soliciting bids for this project and the dates and methods used for following up initial solicitations to determine with certainty whether the DBEs were interested (please attach copies of solicitations, telephone records, fax confirmations, etc.):

Names of DBEs Solicited	Date of Initial Solicitation	Follow Up Methods and Dates

C. The items of work which the bidder made available to DBE firms including, where appropriate, any breaking down of the contract work items (including those items normally performed by the bidder with its own forces) into economically feasible units to facilitate DBE participation. It is the bidder's responsibility to demonstrate that sufficient work to facilitate DBE participation was made available to DBE firms.

Items of Work	Bidder Normally Performs Item (Y/N)	Breakdown of Items	Amount ($)	Percentage Of Contract

D. The names, addresses and phone numbers of rejected DBE firms, the reasons for the bidder's rejection of the DBEs, the firms selected for that work (please attach copies of quotes from the firms involved), and the price difference for each DBE if the selected firm is not a DBE:

Names, addresses and phone numbers of rejected DBEs and the reasons for the bidder's rejection of the DBEs:

_____
_____
_____
_____

Names, addresses and phone numbers of firms selected for the work above:

_____
_____
_____
_____

E. Efforts made to assist interested DBEs in obtaining bonding, lines of credit or insurance, and any technical assistance or information related to the plans, specifications and requirements for the work which was provided to DBEs:

_____
_____
_____
_____

F. Efforts made to assist interested DBEs in obtaining necessary equipment, supplies, materials or related assistance or services, excluding supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate:

_____
_____
_____
_____

G. The names of agencies, organizations or groups contacted to provide assistance in contacting, recruiting and using DBE firms (please attach copies of requests to agencies and any responses received, i.e., lists, Internet page download, etc.):

Name of Agency/Organization	Method/Date of Contact	Results

_____
_____

H. Any additional data to support a demonstration of good faith efforts (use additional sheets if necessary):

_____
_____

NOTE: USE ADDITIONAL SHEETS OF PAPER IF NECESSARY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FINAL REPORT-UTILIZATION OF DISADVANTAGED BUSINESS ENTERPRISES (DBE), FIRST-TIER SUBCONTRACTORS

CEM-2402F (REV 02/2008)

ADA Notice
For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 654-6410 or TDD (916) 654-3880 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814

CONTRACT NUMBER	COUNTY	ROUTE	POST MILES	FEDERAL AID PROJECT NO.	ADMINISTERING AGENCY		CONTRACT COMPLETION DATE
PRIME CONTRACTOR			BUSINESS ADDRESS			ESTIMATED CONTRACT AMOUNT $	

ITEM NO.	DESCRIPTION OF WORK PERFORMED AND MATERIAL PROVIDED	COMPANY NAME AND BUSINESS ADDRESS	DBE CERT. NUMBER	CONTRACT PAYMENTS NON-DBE	CONTRACT PAYMENTS DBE	DATE WORK COMPLETE	DATE OF FINAL PAYMENT
				$	$		
				$	$		
				$	$		
				$	$		
				$	$		
				$	$		
				$	$		
				$	$		
				$	$		
				$	$		
				$	$		
				$	$		
ORIGINAL COMMITMENT $			TOTAL	$	$		

DBE

List all First-Tier Subcontractors, Disadvantaged Business Enterprises (DBEs) regardless of tier, whether or not the firms were originally listed for goal credit. If actual DBE utilization (or item of work) was different than that approved at time of award, provide comments on back of form. List actual amount paid to each entity.

I CERTIFY THAT THE ABOVE INFORMATION IS COMPLETE AND CORRECT

CONTRACTOR REPRESENTATIVE'S SIGNATURE	BUSINESS PHONE NUMBER	DATE

TO THE BEST OF MY INFORMATION AND BELIEF, THE ABOVE INFORMATION IS COMPLETE AND CORRECT

RESIDENT ENGINEER'S SIGNATURE	BUSINESS PHONE NUMBER	DATE

Copy Distribution-Caltrans contracts: **Original** - District Construction; **Copy**- Business Enterprise Program; **Copy**- Contractor; **Copy** Resident Engineer

Copy Distribution-Local Agency contracts: **Original** - District Local Assistance Engineer (submitted with the Report of Expenditure; **Copy**- District Local Assistance Engineer; **Copy**- Local Agency file

FINAL REPORT – UTILIZATION OF DISADVANTAGED BUSINESS ENTERPRISES (DBE), FIRST-TIER SUBCONTRACTORS
CEM 2402(F) (Rev. 02/2008)

The form requires specific information regarding the construction project: Contract Number, County, Route, Post Miles, Federal-aid Project No., the Administering Agency, the Contract Completion Date and the Estimated Contract Amount. It requires the prime contractor name and business address. The focus of the form is to describe who did what by contract item number and descriptions, asking for specific dollar values of item work completed broken down by subcontractors who performed the work both DBE and non-DBE work forces. DBE prime contractors are required to show the date of work performed by their own forces along with the corresponding dollar value of work.

The form has a column to enter the Contract Item No. (or Item No's) and description of work performed or materials provided, as well as a column for the subcontractor name and business address. For those firms who are DBE, there is a column to enter their DBE Certification Number. The DBE should provide their certification number to the contractor and notify the contractor in writing with the date of the decertification if their status should change during the course of the project.

The form has six columns for the dollar value to be entered for the item work performed by the subcontractor.

The Non-DBE column is used to enter the dollar value of work performed for firms who are not certified DBE.

The decision of which column to be used for entering the DBE dollar value is based on what program(s) status the firm is certified. This program status is determined by the California Unified Certification Program by ethnicity, gender, ownership, and control issues at time of certification. To confirm the certification status and program status, access the Department of Transportation Civil Rights web site at: http://www.dot.ca.gov/hq/bep or by calling (916) 324-1700 or the toll free number at (888) 810-6346.

Based on this DBE Program status, the following table depicts which column to be used:

DBE Program Status	Column to be used
If program status shows DBE only with no other programs listed	DBE

If a contractor performing work as a DBE on the project becomes decertified and still performs work after their decertification date, enter the total dollar value performed by this contractor under the appropriate DBE identification column.

If a contractor performing work as a non-DBE on the project becomes certified as a DBE, enter the dollar value of all work performed after certification as a DBE under the appropriate identification column.

Enter the total of each of the six columns in Form CEM-2402(F).

Any changes to DBE certification must also be submitted on Form-CEM 2403(F).

Enter the Date Work Completed as well as the Date of Final Payment (the date when the prime contractor made the "final payment" to the subcontractor for the portion of work listed as being completed).

The contractor and the resident engineer sign and date the form indicating that the information provided is complete and correct.

EXHIBIT 17-O DISADVANTAGED BUSINESS ENTERPRISES (DBE) CERTIFICATION STATUS CHANGE

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION
CP-CEM-2403(F) (New. 10/99)

CONTRACT NUMBER	COUNTY	ROUTE	POST MILES	ADMINISTERING AGENCY	CONTRACT COMPLETION DATE
PRIME CONTRACTOR			BUSINESS ADDRESS		ESTIMATED CONTRACT AMOUNT

Prime Contractor: List all DBEs with changes in certification status (certified/decertified) while in your employ, whether or not firms were originally listed for good credit.
Attach DBE certification/Decertification letter in accordance with the Special Provisions

CONTRACT ITEM NO.	SUBCONTRACT NAME AND BUSINESS ADDRESS	BUSINESS PHONE	CERTIFICATION NUMBER	AMOUNT PAID WHILE CERTIFIED	CERTIFICATION/ DECERTIFICATION DATE Letter attached
				$	
				$	
				$	
				$	
				$	
				$	
				$	
				$	
				$	

Comments:

I CERTIFY THAT THE ABOVE INFORMATION IS COMPLETE AND CORRECT

CONTRACTOR REPRESENTATIVE SIGNATURE	TITLE	BUSINESS PHONE NUMBER	DATE

TO THE BEST OF MY KNOWLEDGE, THE ABOVE INFORMATION IS COMPLETE AND CORRECT

RESIDENT ENGINEER	BUSINESS PHONE NUMBER	DATE

Distribution Original copy -DLAE
Copy -1) Business Enterprise Program 2) Prime Contactor 3) Local Agency 4) Resident Engineer

Form CP-CEM 2403(F) (New 10/99)
DISADVANTAGED BUSINESS ENTERPRISES (DBE) CHANGE IN CERTIFICATION STATUS REPORT

The top of the form requires specific information regarding the construction project: Contract Number, County, Route, Post Miles, the Administering Agency, the Contract Completion Date, and the Estimated Contract Amount. It requires the Prime Contractor's name and Business Address. The focus of the form is to substantiate and verify the actual DBE dollar amount paid to contractors on federally funded projects that had a changed in Certification status during the course of the completion of the contract. The two situations that are being addressed by CP-CEM 2403(F) are, if a firm certified as a DBE and doing work on the contract during the course of the project becomes Decertified, and if a non-DBE firm doing work on the contract during the course of the project becomes Certified as a DBE.

The form has a column to enter the Contract Item No (or Item Nos.) as well as a column for the Subcontractor's Name, Business Address, Business Phone, and contractor's Certification Number.

The column entitled Amount Paid While Certified will be used to enter the actual dollar value of the work performed by those contractors who meet the conditions as outlined above during the time period they are Certified as a DBE. This column on the CP-CEM-2403(F) should only reflect the dollar value of work performed while the firm was Certified as a DBE.

The column called Certification/Decertification Date (Letter attached) will reflect either the date of the Decertification Letter sent out by the Civil Rights Program or the date of the Certification Certificate mailed out by the Civil Rights Program. There is a box to check that support documentation is attached to the CP-CEM-2403 (F) form.

There is a Comments section for any additional information that may need to be provided regarding any of the above transactions.

The CEM-2403(F) has an area at the bottom where the Contractor and the Resident Engineer sign and date that the information provided is complete and correct.

There is a Comments section for any additional information that may need to be provided regarding any of the above transactions.

The CEM-2403(F) has an area at the bottom where the Contractor and the Resident Engineer sign and date that the information provided is complete and correct.

BIDDER'S LIST OF SUBCONTRACTORS (DBE and NON-DBE)- PART I

The bidder shall list all subcontractors (both DBE and non-DBE) in accordance with Section 2-1.054 of the Standard Specifications and per Title 49, Section 26.11 of the Code of Federal Regulations. This listing is required in addition to listing DBE Subcontractors elsewhere in the proposal. **Photocopy this form for additional firms.**

Firm Name/ Address/ City, State, ZIP	**Phone/ Fax**	**Annual Gross Receipts**	**Description of Portion of Work to be Performed**	**Local Agency Use Only (Certified DBE?)**
Name	*Phone*	☐ < $1 million		YES
		☐ < $5 million		NO
Address		☐ < $10 million		*If YES list DBE #:*
	Fax	☐ < $15 million		
City State ZIP		☐ > $15 million		Age of Firm (Yrs.)
Name	*Phone*	☐ < $1 million		YES
		☐ < $5 million		NO
Address		☐ < $10 million		*If YES list DBE #:*
	Fax	☐ < $15 million		
City State ZIP		☐ > $15 million		Age of Firm (Yrs.)
Name	*Phone*	☐ < $1 million		YES
		☐ < $5 million		NO
Address		☐ < $10 million		*If YES list DBE #:*
	Fax	☐ < $15 million		
City State ZIP		☐ > $15 million		Age of Firm (Yrs.)
Name	*Phone*	☐ < $1 million		YES
		☐ < $5 million		NO
Address		☐ < $10 million		*If YES list DBE #:*
	Fax	☐ < $15 million		
City State ZIP		☐ > $15 million		Age of Firm (Yrs.)

Distribution: 1) Original - Local Agency File

BIDDER'S LIST OF SUBCONTRACTORS (DBE and NON-DBE)- PART II

The bidder shall list all subcontractors who provided a quote or bid but were not selected to participate as a subcontractor on this project. This is required for compliance with Title 49, Section 26 of the Code of Federal Regulations. Photocopy this form for additional firms.

Firm Name/ Address/ City, State, ZIP	**Phone/ Fax**	**Annual Gross Receipts**	**Description of Portion of Work to be Performed**	**Local Agency Use Only (Certified DBE?)**
Name	*Phone*	☐ < $1 million		YES
		☐ < $5 million		NO
Address		☐ < $10 million		*If YES list DBE #:*
	Fax	☐ < $15 million		
City State ZIP		☐ > $15 million		Age of Firm (Yrs.)
Name	*Phone*	☐ < $1 million		YES
		☐ < $5 million		NO
Address		☐ < $10 million		*If YES list DBE #:*
	Fax	☐ < $15 million		
City State ZIP		☐ > $15 million		Age of Firm (Yrs.)
Name	*Phone*	☐ < $1 million		YES
		☐ < $5 million		NO
Address		☐ < $10 million		*If YES list DBE #:*
	Fax	☐ < $15 million		
City State ZIP		☐ > $15 million		Age of Firm (Yrs.)
Name	*Phone*	☐ < $1 million		YES
		☐ < $5 million		NO
Address		☐ < $10 million		*If YES list DBE #:*
	Fax	☐ < $15 million		
City State ZIP		☐ > $15 million		Age of Firm (Yrs.)

Distribution: 1) Original – Local Agency File

General Decision Number: CA150037 08/07/2015 CA37

Superseded General Decision Number: CA20140037

State: California

Construction Types: Building, Heavy (Heavy and Dredging) and Highway

County: San Bernardino County in California.

BUILDING CONSTRUCTION PROJECTS; DREDGING PROJECTS (does not include hopper dredge work); HEAVY CONSTRUCTION PROJECTS (does not include water well drilling); HIGHWAY CONSTRUCTION PROJECTS

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of $10.10 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/02/2015
1	01/16/2015
2	01/23/2015
3	02/20/2015
4	03/27/2015
5	05/08/2015
6	06/19/2015
7	07/10/2015
8	07/17/2015
9	07/24/2015
10	07/31/2015
11	08/07/2015

ASBE0005-002 06/30/2014

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems)	$ 35.44	19.36
Fire Stop Technician (Application of Firestopping Materials for wall openings and penetrations in walls, floors, ceilings and curtain walls)	$ 24.34	16.09

ASBE0005-004 06/24/2013

	Rates	Fringes
Asbestos Removal worker/hazardous material handler (Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not)	$ 16.95	10.23

BOIL0092-003 10/01/2012

	Rates	Fringes
BOILERMAKER	$ 41.17	28.27

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* BRCA0004-011 05/01/2015

	Rates	Fringes
BRICKLAYER; MARBLE SETTER	$ 37.15	13.02

*The wage scale for prevailing wage projects performed in Blythe, China lake, Death Valley, Fort Irwin, Twenty-Nine Palms, Needles and 1-15 corridor (Barstow to the Nevada State Line) will be Three Dollars ($3.00) above the standard San Bernardino/Riverside County hourly wage rate

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BRCA0018-004 06/01/2014

	Rates	Fringes
MARBLE FINISHER	$ 28.45	11.38
TILE FINISHER	$ 23.78	9.84
TILE LAYER	$ 35.14	14.33

BRCA0018-010 09/01/2013

	Rates	Fringes
TERRAZZO FINISHER	$ 26.59	10.34
TERRAZZO WORKER/SETTER	$ 33.63	11.13

CARP0409-001 07/01/2010

	Rates	Fringes
CARPENTER		
(1) Carpenter, Cabinet Installer, Insulation Installer, Hardwood Floor Worker and acoustical installer	$ 37.35	11.08

(2) Millwright	$ 37.85	11.08
(3) Piledrivermen/Derrick Bargeman, Bridge or Dock Carpenter, Heavy Framer, Rock Bargeman or Scowman, Rockslinger, Shingler (Commercial)	$ 37.48	11.08
(4) Pneumatic Nailer, Power Stapler	$ 37.60	11.08
(5) Sawfiler	$ 37.44	11.08
(6) Scaffold Builder	$ 28.55	11.08
(7) Table Power Saw Operator	$ 37.45	11.08

FOOTNOTE: Work of forming in the construction of open cut sewers or storm drains, on operations in which horizontal lagging is used in conjunction with steel H-Beams driven or placed in pre- drilled holes, for that portion of a lagged trench against which concrete is poured, namely, as a substitute for back forms (which work is performed by piledrivers): $0.13 per hour additional.

CARP0409-002 07/01/2008

	Rates	Fringes
Diver		
(1) Wet	$ 663.68	9.82
(2) Standby	$ 331.84	9.82
(3) Tender	$ 323.84	9.82
(4) Assistant Tender	$ 299.84	9.82

Amounts in "Rates' column are per day

CARP0409-005 07/01/2010

	Rates	Fringes
Drywall		
DRYWALL INSTALLER/LATHER	$ 37.35	11.08
STOCKER/SCRAPPER	$ 10.00	6.67

CARP0409-008 08/01/2010

	Rates	Fringes
Modular Furniture Installer	$ 17.00	7.41

ELEC0440-004 05/26/2014

COMMUNICATIONS AND SYSTEMS WORK

	Rates	Fringes
Communications System		
Installer	$ 28.38	4%+11.45
Technician	$ 30.18	4%+11.45

SCOPE OF WORK:

Installation, testing, service and maintenance of systems utilizing the transmission and/or transference of voice, sound, vision and digital for commercial, educational, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call systems, radio page, school intercom and sound, burglar alarms, fire alarms, and low voltage master clock systems in commercial buildings. Communication Systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding all other data systems or multiple systems which include control function or power supply; excluding installation of raceway systems, conduit systems, line voltage work, and energy management systems. Does not cover work performed at China Lake Naval Ordnance Test Station.

ELEC0477-002 06/01/2015

	Rates	Fringes
Electricians:	$ 36.07	21.90

CABLE SPLICER: $1.00 per hour above Electrician rate.
TUNNEL WORK: 10% above Electrician rate.

ZONE PAY:
Zone A - 80 road miles from Post Office, 455 Orange Show Lane, San Bernardino, will be a free zone for all contractors
Zone B - Any work performed outside Zone A's 80 road miles, shall add $12.00 per hour to the current wage scale.

ELEC1245-001 06/01/2015

	Rates	Fringes
LINE CONSTRUCTION		
(1) Lineman; Cable splicer	$ 52.85	15.53
(2) Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), overhead & underground distribution line equipment)	$ 42.21	14.32
(3) Groundman	$ 32.28	14.03
(4) Powderman	$ 47.19	14.60

HOLIDAYS: New Year's Day, M.L. King Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day and day after Thanksgiving, Christmas Day

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ELEV0018-001 01/01/2015

	Rates	Fringes
ELEVATOR MECHANIC	$ 49.90	28.38

FOOTNOTE:
PAID VACATION: Employer contributes 8% of regular hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for 6 months to 5 years of service.
PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

ENGI0012-003 07/06/2015

	Rates	Fringes
OPERATOR: Power Equipment (All Other Work)		
GROUP 1	$ 39.95	23.35
GROUP 2	$ 40.73	23.35
GROUP 3	$ 41.02	23.35
GROUP 4	$ 42.51	23.35
GROUP 5	$ 41.86	23.35
GROUP 6	$ 41.83	23.35
GROUP 8	$ 42.84	23.35
GROUP 9	$ 42.19	23.35
GROUP 10	$ 42.96	23.35
GROUP 11	$ 42.31	23.35
GROUP 12	$ 43.13	23.35
GROUP 13	$ 43.23	23.35
GROUP 14	$ 43.26	23.35
GROUP 15	$ 43.34	23.35
GROUP 16	$ 43.46	23.35
GROUP 17	$ 43.63	23.35
GROUP 18	$ 43.73	23.35
GROUP 19	$ 43.84	23.35
GROUP 20	$ 43.96	23.35
GROUP 21	$ 44.13	23.35
GROUP 22	$ 44.23	23.35
GROUP 23	$ 44.34	23.35
GROUP 24	$ 44.46	23.35
GROUP 25	$ 44.63	23.35
OPERATOR: Power Equipment (Cranes, Piledriving & Hoisting)		
GROUP 1	$ 41.30	23.35
GROUP 2	$ 42.08	23.35
GROUP 3	$ 42.37	23.35
GROUP 4	$ 42.51	23.35
GROUP 5	$ 42.73	23.35
GROUP 6	$ 42.84	23.35
GROUP 7	$ 42.96	23.35
GROUP 8	$ 43.13	23.35
GROUP 9	$ 43.30	23.35
GROUP 10	$ 44.30	23.35
GROUP 11	$ 45.30	23.35
GROUP 12	$ 46.30	23.35

GROUP 13	$ 47.30	23.35

OPERATOR: Power Equipment
(Tunnel Work)

GROUP 1	$ 41.80	23.35
GROUP 2	$ 42.58	23.35
GROUP 3	$ 42.87	23.35
GROUP 4	$ 43.01	23.35
GROUP 5	$ 43.23	23.35
GROUP 6	$ 43.34	23.35
GROUP 7	$ 43.46	23.35

PREMIUM PAY:
$3.75 per hour shall be paid on all Power Equipment Operator work on the followng Military Bases: China Lake Naval Reserve, Vandenberg AFB, Point Arguello, Seely Naval Base, Fort Irwin, Nebo Annex Marine Base, Marine Corp Logistics Base Yermo, Edwards AFB, 29 Palms Marine Base and Camp Pendleton

Workers required to suit up and work in a hazardous material environment: $2.00 per hour additional. Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.

SEE ZONE DEFINITIONS AFTER CLASSIFICATIONS

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Bargeman; Brakeman; Compressor operator; Ditch Witch, with seat or similar type equipment; Elevator operator-inside; Engineer Oiler; Forklift operator (includes loed, lull or similar types under 5 tons; Generator operator; Generator, pump or compressor plant operator; Pump operator; Signalman; Switchman

GROUP 2: Asphalt-rubber plant operator (nurse tank operator); Concrete mixer operator-skip type; Conveyor operator; Fireman; Forklift operator (includes loed, lull or similar types over 5 tons; Hydrostatic pump operator; oiler crusher (asphalt or concrete plant); Petromat laydown machine; PJU side dum jack; Screening and conveyor machine operator (or similar types); Skiploader (wheel type up to 3/4 yd. without attachment); Tar pot fireman; Temporary heating plant operator; Trenching machine oiler

GROUP 3: Asphalt-rubber blend operator; Bobcat or similar type (Skid steer); Equipment greaser (rack); Ford Ferguson (with dragtype attachments); Helicopter radioman (ground); Stationary pipe wrapping and cleaning machine operator

GROUP 4: Asphalt plant fireman; Backhoe operator (mini-max or similar type); Boring machine operator; Boxman or mixerman (asphalt or concrete); Chip spreading machine operator; Concrete cleaning decontamination machine operator; Concrete Pump Operator (small portable); Drilling machine operator, small auger types (Texoma super economatic or similar types - Hughes 100 or 200 or similar types - drilling depth of 30' maximum); Equipment greaser (grease truck); Guard rail post driver operator; Highline cableway signalman; Hydra-hammer-aero stomper; Micro Tunneling

(above ground tunnel); Power concrete curing machine operator; Power concrete saw operator; Power-driven jumbo form setter operator; Power sweeper operator; Rock Wheel Saw/Trencher; Roller operator (compacting); Screed operator (asphalt or concrete); Trenching machine operator (up to 6 ft.); Vacuum or much truck

GROUP 5: Equipment Greaser (Grease Truck/Multi Shift).

GROUP 6: Articulating material hauler; Asphalt plant engineer; Batch plant operator; Bit sharpener; Concrete joint machine operator (canal and similar type); Concrete planer operator; Dandy digger; Deck engine operator; Derrickman (oilfield type); Drilling machine operator, bucket or auger types (Calweld 100 bucket or similar types - Watson 1000 auger or similar types - Texoma 330, 500 or 600 auger or similar types - drilling depth of 45' maximum); Drilling machine operator; Hydrographic seeder machine operator (straw, pulp or seed), Jackson track maintainer, or similar type; Kalamazoo Switch tamper, or similar type; Machine tool operator; Maginnis internal full slab vibrator, Mechanical berm, curb or gutter(concrete or asphalt); Mechanical finisher operator (concrete, Clary-Johnson-Bidwell or similar); Micro tunnel system (below ground); Pavement breaker operator (truck mounted); Road oil mixing machine operator; Roller operator (asphalt or finish), rubber-tired earth moving equipment (single engine, up to and including 25 yds. struck); Self-propelled tar pipelining machine operator; Skiploader operator (crawler and wheel type, over 3/4 yd. and up to and including 1-1/2 yds.); Slip form pump operator (power driven hydraulic lifting device for concrete forms); Tractor operator-bulldozer, tamper-scraper (single engine, up to 100 h.p. flywheel and similar types, up to and including D-5 and similar types); Tugger hoist operator (1 drum); Ultra high pressure waterjet cutting tool system operator; Vacuum blasting machine operator

GROUP 8: Asphalt or concrete spreading operator (tamping or finishing); Asphalt paving machine operator (Barber Greene or similar type); Asphalt-rubber distribution operator; Backhoe operator (up to and including 3/4 yd.), small ford, Case or similar; Cast-in-place pipe laying machine operator; Combination mixer and compressor operator (gunite work); Compactor operator (self-propelled); Concrete mixer operator (paving); Crushing plant operator; Drill Doctor; Drilling machine operator, Bucket or auger types (Calweld 150 bucket or similar types - Watson 1500, 2000 2500 auger or similar types - Texoma 700, 800 auger or similar types - drilling depth of 60' maximum); Elevating grader operator; Grade checker; Gradall operator; Grouting machine operator; Heavy-duty repairman; Heavy equipment robotics operator; Kalamazoo balliste regulator or similar type; Kolman belt loader and similar type; Le Tourneau blob compactor or similar type; Loader operator (Athey, Euclid, Sierra and similar types); Mobark Chipper or similar; Ozzie padder or similar types; P.C. slot saw; Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pumpcrete gun operator; Rock Drill or similar types; Rotary drill operator (excluding caisson type); Rubber-tired

earth-moving equipment operator (single engine, caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator (multiple engine up to and including 25 yds. struck); Rubber-tired scraper operator (self-loading paddle wheel type-John Deere, 1040 and similar single unit); Self-propelled curb and gutter machine operator; Shuttle buggy; Skiploader operator (crawler and wheel type over 1-1/2 yds. up to and including 6-1/2 yds.); Soil remediation plant operator; Surface heaters and planer operator; Tractor compressor drill combination operator; Tractor operator (any type larger than D-5 - 100 flywheel h.p. and over, or similar-bulldozer, tamper, scraper and push tractor single engine); Tractor operator (boom attachments), Traveling pipe wrapping, cleaning and bendng machine operator; Trenching machine operator (over 6 ft. depth capacity, manufacturer's rating); trenching Machine with Road Miner attachment (over 6 ft depth capacity): Ultra high pressure waterjet cutting tool system mechanic; Water pull (compaction) operator

GROUP 9: Heavy Duty Repairman

GROUP 10: Drilling machine operator, Bucket or auger types (Calweld 200 B bucket or similar types-Watson 3000 or 5000 auger or similar types-Texoma 900 auger or similar types-drilling depth of 105' maximum); Dual drum mixer, dynamic compactor LDC350 (or similar types); Monorail locomotive operator (diesel, gas or electric); Motor patrol-blade operator (single engine); Multiple engine tractor operator (Euclid and similar type-except Quad 9 cat.); Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Pneumatic pipe ramming tool and similar types; Prestressed wrapping machine operator; Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Rubber tired earth moving equipment operator (multiple engine, Euclid, caterpillar and similar over 25 yds. and up to 50 yds. struck), Tower crane repairman; Tractor loader operator (crawler and wheel type over 6-1/2 yds.); Woods mixer operator (and similar Pugmill equipment)

GROUP 11: Heavy Duty Repairman - Welder Combination, Welder - Certified.

GROUP 12: Auto grader operator; Automatic slip form operator; Drilling machine operator, bucket or auger types (Calweld, auger 200 CA or similar types - Watson, auger 6000 or similar types - Hughes Super Duty, auger 200 or similar types - drilling depth of 175' maximum); Hoe ram or similar with compressor; Mass excavator operator less tha 750 cu. yards; Mechanical finishing machine operator; Mobile form traveler operator; Motor patrol operator (multi-engine); Pipe mobile machine operator; Rubber-tired earth- moving equipment operator (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck); Rubber-tired self- loading scraper operator (paddle-wheel-auger type self-loading - two (2) or more units)

GROUP 13: Rubber-tired earth-moving equipment operator operating equipment with push-pull system (single engine, up to and including 25 yds. struck)

GROUP 14: Canal liner operator; Canal trimmer operator; Remote- control earth-moving equipment operator (operating a second piece of equipment: $1.00 per hour additional); Wheel excavator operator (over 750 cu. yds.)

GROUP 15: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine-up to and including 25 yds. struck)

GROUP 16: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 17: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 50 cu. yds. struck); Tandem tractor operator (operating crawler type tractors in tandem - Quad 9 and similar type)

GROUP 18: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, up to and including 25 yds. struck)

GROUP 19: Rotex concrete belt operator (or similar types); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds.and up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, up to and including 25 yds. struck)

GROUP 20: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 21: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar type, over

50 cu. yds. struck)

GROUP 22: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, up to and including 25 yds. struck)

GROUP 23: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck); Rubber-tired earth-moving equipment operator, operating with the tandem push-pull system (multiple engine, up to and including 25 yds. struck)

GROUP 24: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 25: Concrete pump operator-truck mounted; Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)

CRANES, PILEDRIVING AND HOISTING EQUIPMENT CLASSIFICATIONS

GROUP 1: Engineer oiler; Fork lift operator (includes loed, lull or similar types)

GROUP 2: Truck crane oiler

GROUP 3: A-frame or winch truck operator; Ross carrier operator (jobsite)

GROUP 4: Bridge-type unloader and turntable operator; Helicopter hoist operator

GROUP 5: Hydraulic boom truck; Stinger crane (Austin-Western or similar type); Tugger hoist operator (1 drum)

GROUP 6: Bridge crane operator; Cretor crane operator; Hoist operator (Chicago boom and similar type); Lift mobile operator; Lift slab machine operator (Vagtborg and similar types); Material hoist and/or manlift operator; Polar gantry crane operator; Self Climbing scaffold (or similar type); Shovel, backhoe, dragline, clamshell operator (over 3/4 yd. and up to 5 cu. yds. mrc); Tugger hoist operator

GROUP 7: Pedestal crane operator; Shovel, backhoe, dragline, clamshell operator (over 5 cu. yds. mrc); Tower crane repair; Tugger hoist operator (3 drum)

GROUP 8: Crane operator (up to and including 25 ton capacity); Crawler transporter operator; Derrick barge operator (up to and including 25 ton capacity); Hoist operator, stiff legs, Guy derrick or similar type (up to

and including 25 ton capacity); Shovel, backhoe, dragline, clamshell operator (over 7 cu. yds., M.R.C.)

GROUP 9: Crane operator (over 25 tons and up to and including 50 tons mrc); Derrick barge operator (over 25 tons up to and including 50 tons mrc); Highline cableway operator; Hoist operator, stiff legs, Guy derrick or similar type (over 25 tons up to and including 50 tons mrc); K-crane operator; Polar crane operator; Self erecting tower crane operator maximum lifting capacity ten tons

GROUP 10: Crane operator (over 50 tons and up to and including 100 tons mrc); Derrick barge operator (over 50 tons up to and including 100 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 50 tons up to and including 100 tons mrc), Mobile tower crane operator (over 50 tons, up to and including 100 tons M.R.C.); Tower crane operator and tower gantry

GROUP 11: Crane operator (over 100 tons and up to and including 200 tons mrc); Derrick barge operator (over 100 tons up to and including 200 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 100 tons up to and including 200 tons mrc); Mobile tower crane operator (over 100 tons up to and including 200 tons mrc)

GROUP 12: Crane operator (over 200 tons up to and including 300 tons mrc); Derrick barge operator (over 200 tons up to and including 300 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 200 tons, up to and including 300 tons mrc); Mobile tower crane operator (over 200 tons, up to and including 300 tons mrc)

GROUP 13: Crane operator (over 300 tons); Derrick barge operator (over 300 tons); Helicopter pilot; Hoist operator, stiff legs, Guy derrick or similar type (over 300 tons); Mobile tower crane operator (over 300 tons)

TUNNEL CLASSIFICATIONS

GROUP 1: Skiploader (wheel type up to 3/4 yd. without attachment)

GROUP 2: Power-driven jumbo form setter operator

GROUP 3: Dinkey locomotive or motorperson (up to and including 10 tons)

GROUP 4: Bit sharpener; Equipment greaser (grease truck); Slip form pump operator (power-driven hydraulic lifting device for concrete forms); Tugger hoist operator (1 drum); Tunnel locomotive operator (over 10 and up to and including 30 tons)

GROUP 5: Backhoe operator (up to and including 3/4 yd.); Small Ford, Case or similar; Drill doctor; Grouting machine operator; Heading shield operator; Heavy-duty repairperson; Loader operator (Athey, Euclid, Sierra and similar types); Mucking machine operator (1/4 yd., rubber-tired, rail or track type); Pneumatic concrete placing machine operator

(Hackley-Presswell or similar type); Pneumatic heading shield (tunnel); Pumpcrete gun operator; Tractor compressor drill combination operator; Tugger hoist operator (2 drum); Tunnel locomotive operator (over 30 tons)

GROUP 6: Heavy Duty Repairman

GROUP 7: Tunnel mole boring machine operator

ENGINEERS ZONES

$1.00 additional per hour for all of IMPERIAL County and the portions of KERN, RIVERSIDE & SAN BERNARDINO Counties as defined below:

That area within the following Boundary: Begin in San Bernardino County, approximately 3 miles NE of the intersection of I-15 and the California State line at that point which is the NW corner of Section 1, T17N,m R14E, San Bernardino Meridian. Continue W in a straight line to that point which is the SW corner of the northwest quarter of Section 6, T27S, R42E, Mt. Diablo Meridian. Continue North to the intersection with the Inyo County Boundary at that point which is the NE corner of the western half of the northern quarter of Section 6, T25S, R42E, MDM. Continue W along the Inyo and San Bernardino County boundary until the intersection with Kern County, as that point which is the SE corner of Section 34, T24S, R40E, MDM. Continue W along the Inyo and Kern County boundary until the intersection with Tulare County, at that point which is the SW corner of the SE quarter of Section 32, T24S, R37E, MDM. Continue W along the Kern and Tulare County boundary, until that point which is the NW corner of T25S, R32E, MDM. Continue S following R32E lines to the NW corner of T31S, R32E, MDM. Continue W to the NW corner of T31S, R31E, MDM. Continue S to the SW corner of T32S, R31E, MDM. Continue W to SW corner of SE quarter of Section 34, T32S, R30E, MDM. Continue S to SW corner of T11N, R17W, SBM. Continue E along south boundary of T11N, SBM to SW corner of T11N, R7W, SBM. Continue S to SW corner of T9N, R7W, SBM. Continue E along south boundary of T9N, SBM to SW corner of T9N, R1E, SBM. Continue S along west boundary of R1E, SMB to Riverside County line at the SW corner of T1S, R1E, SBM. Continue E along south boundary of T1s, SBM (Riverside County Line) to SW corner of T1S, R10E, SBM. Continue S along west boundary of R10E, SBM to Imperial County line at the SW corner of T8S, R10E, SBM. Continue W along Imperial and Riverside county line to NW corner of T9S, R9E, SBM. Continue S along the boundary between Imperial and San Diego Counties, along the west edge of R9E, SBM to the south boundary of Imperial County/California state line. Follow the California state line west to Arizona state line, then north to Nevada state line, then continuing NW back to start at the point which is the NW corner of Section 1, T17N, R14E, SBM

$1.00 additional per hour for portions of SAN LUIS OBISPO, KERN, SANTA BARBARA & VENTURA as defined below:

That area within the following Boundary: Begin approximately 5 miles north of the community of Cholame, on the Monterey County and San Luis Obispo County boundary at the NW corner of T25S,

R16E, Mt. Diablo Meridian. Continue south along the west side of R16E to the SW corner of T30S, R16E, MDM. Continue E to SW corner of T30S, R17E, MDM. Continue S to SW corner of T31S, R17E, MDM. Continue E to SW corner of T31S, R18E, MDM. Continue S along West side of R18E, MDM as it crosses into San Bernardino Meridian numbering area and becomes R30W. Follow the west side of R30W, SBM to the SW corner of T9N, R30W, SBM. Continue E along the south edge of T9N, SBM to the Santa Barbara County and Ventura County boundary at that point whch is the SW corner of Section 34.T9N, R24W, SBM, continue S along the Ventura County line to that point which is the SW corner of the SE quarter of Section 32, T7N, R24W, SBM. Continue E along the south edge of T7N, SBM to the SE corner to T7N, R21W, SBM. Continue N along East side of R21W, SBM to Ventura County and Kern County boundary at the NE corner of T8N, R21W. Continue W along the Ventura County and Kern County boundary to the SE corner of T9N, R21W. Continue North along the East edge of R21W, SBM to the NE corner of T12N, R21W, SBM. Continue West along the north edge of T12N, SBM to the SE corner of T32S, R21E, MDM. [T12N SBM is a think strip between T11N SBM and T32S MDM]. Continue North along the East side of R21E, MDM to the Kings County and Kern County border at the NE corner of T25S, R21E, MDM, continue West along the Kings County and Kern County Boundary until the intersection of San Luis Obispo County. Continue west along the Kings County and San Luis Obispo County boundary until the intersection with Monterey County. Continue West along the Monterey County and San Luis Obispo County boundary to the beginning point at the NW corner of T25S, R16E, MDM.

$2.00 additional per hour for INYO and MONO Counties and the Northern portion of SAN BERNARDINO County as defined below:

That area within the following Boundary: Begin at the intersection of the northern boundary of Mono County and the California state line at the point which is the center of Section 17, T10N, R22E, Mt. Diablo Meridian. Continue S then SE along the entire western boundary of Mono County, until it reaches Inyo County at the point which is the NE corner of the Western half of the NW quarter of Section 2, T8S, R29E, MDM. Continue SSE along the entire western boundary of Inyo County, until the intersection with Kern County at the point which is the SW corner of the SE 1/4 of Section 32, T24S, R37E, MDM. Continue E along the Inyo and Kern County boundary until the intersection with San Bernardino County at that point which is the SE corner of section 34, T24S, R40E, MDM. Continue E along the Inyo and San Bernardino County boundary until the point which is the NE corner of the Western half of the NW quarter of Section 6, T25S, R42E, MDM. Continue S to that point which is the SW corner of the NW quarter of Section 6, T27S, R42E, MDM. Continue E in a straight line to the California and Nevada state border at the point which is the NW corner of Section 1, T17N, R14E, San Bernardino Meridian. Then continue NW along the state line to the starting point, which is the center of Section 18, T10N, R22E, MDM.

REMAINING AREA NOT DEFINED ABOVE RECIEVES BASE RATE

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* ENGI0012-004 08/01/2015

	Rates	Fringes
OPERATOR: Power Equipment (DREDGING)		
(1) Leverman	$ 49.50	23.60
(2) Dredge dozer	$ 43.53	23.60
(3) Deckmate	$ 43.42	23.60
(4) Winch operator (stern winch on dredge)	$ 42.87	23.60
(5) Fireman-Oiler, Deckhand, Bargeman, Leveehand	$ 42.33	23.60
(6) Barge Mate	$ 42.94	23.60

IRON0377-002 07/01/2015

	Rates	Fringes
Ironworkers:		
Fence Erector	$ 27.08	20.21
Ornamental, Reinforcing and Structural	$ 33.50	28.85

PREMIUM PAY:

$6.00 additional per hour at the following locations:

China Lake Naval Test Station, Chocolate Mountains Naval Reserve-Niland,
Edwards AFB, Fort Irwin Military Station, Fort Irwin Training Center-Goldstone, San Clemente Island, San Nicholas Island, Susanville Federal Prison, 29 Palms - Marine Corps, U.S. Marine Base - Barstow, U.S. Naval Air Facility - Sealey, Vandenberg AFB

$4.00 additional per hour at the following locations:

Army Defense Language Institute - Monterey, Fallon Air Base, Naval Post Graduate School - Monterey, Yermo Marine Corps Logistics Center

$2.00 additional per hour at the following locations:

Port Hueneme, Port Mugu, U.S. Coast Guard Station - Two Rock

LABO0300-005 01/01/2014

	Rates	Fringes
Asbestos Removal Laborer	$ 28.00	15.25

SCOPE OF WORK: Includes site mobilization, initial site cleanup, site preparation, removal of asbestos-containing material and toxic waste, encapsulation, enclosure and disposal of asbestos- containing materials and toxic waste by hand or with equipment or machinery; scaffolding,

fabrication of temporary wooden barriers and assembly of decontamination stations.

LABO0345-001 07/01/2014

	Rates	Fringes
LABORER (GUNITE)		
GROUP 1	$ 34.79	17.92
GROUP 2	$ 33.84	17.92
GROUP 3	$ 30.30	17.92

FOOTNOTE: GUNITE PREMIUM PAY: Workers working from a Bosn'n's Chair or suspended from a rope or cable shall receive 40 cents per hour above the foregoing applicable classification rates. Workers doing gunite and/or shotcrete work in a tunnel shall receive 35 cents per hour above the foregoing applicable classification rates, paid on a portal-to-portal basis. Any work performed on, in or above any smoke stack, silo, storage elevator or similar type of structure, when such structure is in excess of 75'-0" above base level and which work must be performed in whole or in part more than 75'-0" above base level, that work performed above the 75'-0" level shall be compensated for at 35 cents per hour above the applicable classification wage rate.

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Rodmen, Nozzlemen

GROUP 2: Gunmen

GROUP 3: Reboundmen

LABO0783-002 07/01/2014

	Rates	Fringes
LABORER (TUNNEL)		
GROUP 1	$ 35.74	16.48
GROUP 2	$ 36.06	16.48
GROUP 3	$ 36.52	16.48
GROUP 4	$ 37.21	16.48
LABORER		
GROUP 1	$ 30.19	16.48
GROUP 2	$ 30.74	16.48
GROUP 3	$ 31.29	16.48
GROUP 4	$ 32.84	16.48
GROUP 5	$ 33.19	16.48

LABORER CLASSIFICATIONS

GROUP 1: Cleaning and handling of panel forms; Concrete screeding for rough strike-off; Concrete, water curing; Demolition laborer, the cleaning of brick if performed by a worker performing any other phase of demolition work, and the cleaning of lumber; Fire watcher, limber, brush loader,

piler and debris handler; Flag person; Gas, oil and/or water pipeline laborer; Laborer, asphalt-rubber material loader; Laborer, general or construction; Laborer, general clean-up; Laborer, landscaping; Laborer, jetting; Laborer, temporary water and air lines; Material hose operator (walls, slabs, floors and decks); Plugging, filling of shee bolt holes; Dry packing of concrete; Railroad maintenance, repair track person and road beds; Streetcar and railroad construction track laborers; Rigging and signaling; Scaler; Slip form raiser; Tar and mortar; Tool crib or tool house laborer; Traffic control by any method; Window cleaner; Wire mesh pulling - all concrete pouring operations

GROUP 2: Asphalt shoveler; Cement dumper (on 1 yd. or larger mixer and handling bulk cement); Cesspool digger and installer; Chucktender; Chute handler, pouring concrete, the handling of the chute from readymix trucks, such as walls, slabs, decks, floors, foundation, footings, curbs, gutters and sidewalks; Concrete curer, impervious membrane and form oiler; Cutting torch operator (demolition); Fine grader, highways and street paving, airport, runways and similar type heavy construction; Gas, oil and/or water pipeline wrapper - pot tender and form person; Guinea chaser; Headerboard person - asphalt; Laborer, packing rod steel and pans; Membrane vapor barrier installer; Power broom sweeper (small); Riprap stonepaver, placing stone or wet sacked concrete; Roto scraper and tiller; Sandblaster (pot tender); Septic tank digger and installer(lead); Tank scaler and cleaner; Tree climber, faller, chain saw operator, Pittsburgh chipper and similar type brush shredder; Underground laborer, including caisson bellower

GROUP 3: Buggymobile person; Concrete cutting torch; Concrete pile cutter; Driller, jackhammer, 2-1/2 ft. drill steel or longer; Dri-pak-it machine; Gas, oil and/or water pipeline wrapper, 6-in. pipe and over, by any method, inside and out; High scaler (including drilling of same); Hydro seeder and similar type; Impact wrench multi-plate; Kettle person, pot person and workers applying asphalt, lay-kold, creosote, lime caustic and similar type materials ("applying" means applying, dipping, brushing or handling of such materials for pipe wrapping and waterproofing); Operator of pneumatic, gas, electric tools, vibrating machine, pavement breaker, air blasting, come-alongs, and similar mechanical tools not separately classified herein; Pipelayer's backup person, coating, grouting, making of joints, sealing, caulking, diapering and including rubber gasket joints, pointing and any and all other services; Rock slinger; Rotary scarifier or multiple head concrete chipping scarifier; Steel headerboard and guideline setter; Tamper, Barko, Wacker and similar type; Trenching machine, hand-propelled

GROUP 4: Asphalt raker, lute person, ironer, asphalt dump person, and asphalt spreader boxes (all types); Concrete core cutter (walls, floors or ceilings), grinder or sander; Concrete saw person, cutting walls or flat work, scoring old or new concrete; Cribber, shorer, lagging, sheeting and trench bracing, hand-guided lagging hammer; Head rock slinger; Laborer, asphalt- rubber distributor boot person;

Laser beam in connection with laborers' work; Oversize concrete vibrator operator, 70 lbs. and over; Pipelayer performing all services in the laying and installation of pipe from the point of receiving pipe in the ditch until completion of operation, including any and all forms of tubular material, whether pipe, metallic or non-metallic, conduit and any other stationary type of tubular device used for the conveying of any substance or element, whether water, sewage, solid gas, air, or other product whatsoever and without regard to the nature of material from which the tubular material is fabricated; No-joint pipe and stripping of same; Prefabricated manhole installer; Sandblaster (nozzle person), water blasting, Porta Shot-Blast

GROUP 5: Blaster powder, all work of loading holes, placing and blasting of all powder and explosives of whatever type, regardless of method used for such loading and placing; Driller: All power drills, excluding jackhammer, whether core, diamond, wagon, track, multiple unit, and any and all other types of mechanical drills without regard to the form of motive power; Toxic waste removal

TUNNEL LABORER CLASSIFICATIONS

GROUP 1: Batch plant laborer; Changehouse person; Dump person; Dump person (outside); Swamper (brake person and switch person on tunnel work); Tunnel materials handling person; Nipper; Pot tender, using mastic or other materials (for example, but not by way of limitation, shotcrete, etc.)

GROUP 2: Chucktender, cabletender; Loading and unloading agitator cars; Vibrator person, jack hammer, pneumatic tools (except driller); Bull gang mucker, track person; Concrete crew, including rodder and spreader

GROUP 3: Blaster, driller, powder person; Chemical grout jet person; Cherry picker person; Grout gun person; Grout mixer person; Grout pump person; Jackleg miner; Jumbo person; Kemper and other pneumatic concrete placer operator; Miner, tunnel (hand or machine); Nozzle person; Operating of troweling and/or grouting machines; Powder person (primer house); Primer person; Sandblaster; Shotcrete person; Steel form raiser and setter; Timber person, retimber person, wood or steel; Tunnel Concrete finisher

GROUP 4: Diamond driller; Sandblaster; Shaft and raise work

LABO0783-005 07/01/2014

	Rates	Fringes
Brick Tender	$ 29.12	15.78

LABO1184-001 07/01/2014

	Rates	Fringes
Laborers: (HORIZONTAL DIRECTIONAL DRILLING)		

(1) Drilling Crew Laborer...	$ 31.65	13.33
(2) Vehicle Operator/Hauler.	$ 31.82	13.33
(3) Horizontal Directional Drill Operator.....	$ 33.67	13.33
(4) Electronic Tracking Locator.....	$ 35.67	13.33
Laborers: (STRIPING/SLURRY SEAL)		
GROUP 1.....	$ 32.56	16.28
GROUP 2.....	$ 33.86	16.28
GROUP 3.....	$ 35.87	16.28
GROUP 4.....	$ 37.61	16.28

LABORERS - STRIPING CLASSIFICATIONS

GROUP 1: Protective coating, pavement sealing, including repair and filling of cracks by any method on any surface in parking lots, game courts and playgrounds; carstops; operation of all related machinery and equipment; equipment repair technician

GROUP 2: Traffic surface abrasive blaster; pot tender - removal of all traffic lines and markings by any method (sandblasting, waterblasting, grinding, etc.) and preparation of surface for coatings. Traffic control person: controlling and directing traffic through both conventional and moving lane closures; operation of all related machinery and equipment

GROUP 3: Traffic delineating device applicator: Layout and application of pavement markers, delineating signs, rumble and traffic bars, adhesives, guide markers, other traffic delineating devices including traffic control. This category includes all traffic related surface preparation (sandblasting, waterblasting, grinding) as part of the application process. Traffic protective delineating system installer: removes, relocates, installs, permanently affixed roadside and parking delineation barricades, fencing, cable anchor, guard rail, reference signs, monument markers; operation of all related machinery and equipment; power broom sweeper

GROUP 4: Striper: layout and application of traffic stripes and markings; hot thermo plastic; tape traffic stripes and markings, including traffic control; operation of all related machinery and equipment

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LABO1414-003 08/07/2013

	Rates	Fringes
LABORER		
PLASTER CLEAN-UP LABORER....	$ 27.45	16.36
PLASTER TENDER.....	$ 30.00	16.36

Work on a swing stage scaffold: $1.00 per hour additional.

Work at Military Bases - $3.00 additional per hour:
Coronado Naval Amphibious Base, Fort Irwin, Marine Corps Air

Station-29 Palms, Imperial Beach Naval Air Station, Marine Corps Logistics Supply Base, Marine Corps Pickle Meadows, Mountain Warfare Training Center, Naval Air Facility-Seeley, North Island Naval Air Station, Vandenberg AFB.

PAIN0036-001 07/01/2015

	Rates	Fringes
Painters: (Including Lead Abatement)		
(1) Repaint (excludes San Diego County)	$ 27.29	12.83
(2) All Other Work	$ 30.72	12.83

REPAINT of any previously painted structure. Exceptions: work involving the aerospace industry, breweries, commercial recreational facilities, hotels which operate commercial establishments as part of hotel service, and sports facilities.

PAIN0036-008 10/01/2014

	Rates	Fringes
DRYWALL FINISHER/TAPER	$ 35.18	15.91

PAIN0036-015 06/01/2015

	Rates	Fringes
GLAZIER	$ 40.70	20.92

FOOTNOTE: Additional $1.25 per hour for work in a condor, from the third (3rd) floor and up Additional $1.25 per hour for work on the outside of the building from a swing stage or any suspended contrivance, from the ground up

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PAIN1247-002 01/01/2015

	Rates	Fringes
SOFT FLOOR LAYER	$ 29.85	13.56

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* PLAS0200-008 08/05/2015

	Rates	Fringes
PLASTERER	$ 38.44	13.77

FORT IRWIN; MARINE CORPS AIR STATION 29 PALMS, AND MARINE CORPS LOGISTICS SUPPLY BASE: $3.00 additional per hour.

PLAS0500-002 07/01/2015

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 32.30	20.65

PLUM0016-002 07/01/2015

	Rates	Fringes
PLUMBER, PIPEFITTER, STEAMFITTER		
Plumber and Pipefitter All other work except work on new additions and remodeling of bars, restaurant, stores and commercial buildings not to exceed 5,000 sq. ft. of floor space and work on strip malls, light commercial, tenant improvement and remodel work	$ 45.96	20.71
Work at Edwards AFB	$ 52.96	20.71
Work at Fort Irwin Army Base, Marine Corps Logistic Base at Nebo, Marine Corps Logistic Base at Yermo and Twenty-Nine Palms Marine Base	$ 56.46	20.71
Work ONLY on new additions and remodeling of bars, restaurants, stores and commercial buildings, not to exceed 5,000 sq. ft. of floor space	$ 44.54	19.73
Work ONLY on strip malls, light commercial, tenant improvement and remodel work	$ 35.16	18.06

PLUM0345-001 07/01/2014

	Rates	Fringes
PLUMBER		
Landscape/Irrigation Fitter	$ 29.27	19.75
Sewer & Storm Drain Work	$ 33.24	17.13

ROOF0036-002 08/01/2014

	Rates	Fringes
ROOFER	$ 35.02	13.57

FOOTNOTE: Pitch premium: Work on which employees are exposed to pitch fumes or required to handle pitch, pitch base or pitch impregnated products, or any material containing coal tar pitch, the entire roofing crew shall receive $1.75 per hour "pitch premium" pay.

SFCA0669-009 07/01/2013

Does not include the northern part of the City of Chino, or the Cities of Montclair and Ontario

	Rates	Fringes
SPRINKLER FITTER	$ 34.19	19.37

SFCA0709-004 01/01/2015

THE NORTHERN PART OF THE CITY OF CHINO, AND THE CITIES OF MONTCLAIR AND ONTARIO:

	Rates	Fringes
SPRINKLER FITTER (Fire)	$ 40.46	24.17

SHEE0105-003 07/01/2015

LOS ANGELES (South of a straight line drawn between Gorman and Big Pines)and Catalina Island, INYO, KERN (Northeast part, East of Hwy 395), MONO ORANGE, RIVERSIDE, AND SAN BERNARDINO COUNTIES

	Rates	Fringes
SHEET METAL WORKER		
(1) Commercial - New Construction and Remodel work	$ 41.26	25.38
(2) Industrial work including air pollution control systems, noise abatement, hand rails, guard rails, excluding aritechtural sheet metal work, excluding A-C, heating, ventilating systems for human comfort	$ 41.26	25.38

TEAM0011-002 07/01/2014

	Rates	Fringes
TRUCK DRIVER		
GROUP 1	$ 27.99	24.14
GROUP 2	$ 28.14	24.14
GROUP 3	$ 28.27	24.14
GROUP 4	$ 28.46	24.14
GROUP 5	$ 28.49	24.14
GROUP 6	$ 28.52	24.14
GROUP 7	$ 28.77	24.14
GROUP 8	$ 29.02	24.14
GROUP 9	$ 29.22	24.14
GROUP 10	$ 29.52	24.14
GROUP 11	$ 30.02	24.14

GROUP 12.....$ 30.45 24.14

WORK ON ALL MILITARY BASES:
PREMIUM PAY: $3.00 per hour additional.
[29 palms Marine Base, Camp Roberts, China Lake, Edwards AFB, El Centro Naval Facility, Fort Irwin, Marine Corps Logistics Base at Nebo & Yermo, Mountain Warfare Training Center, Bridgeport, Point Arguello, Point Conception, Vandenberg AFB]

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Truck driver

GROUP 2: Driver of vehicle or combination of vehicles - 2 axles; Traffic control pilot car excluding moving heavy equipment permit load; Truck mounted broom

GROUP 3: Driver of vehicle or combination of vehicles - 3 axles; Boot person; Cement mason distribution truck; Fuel truck driver; Water truck - 2 axle; Dump truck, less than 16 yds. water level; Erosion control driver

GROUP 4: Driver of transit mix truck, under 3 yds.; Dumpcrete truck, less than 6-1/2 yds. water level

GROUP 5: Water truck, 3 or more axles; Truck greaser and tire person ($0.50 additional for tire person); Pipeline and utility working truck driver, including winch truck and plastic fusion, limited to pipeline and utility work; Slurry truck driver

GROUP 6: Transit mix truck, 3 yds. or more; Dumpcrete truck, 6-1/2 yds. water level and over; Vehicle or combination of vehicles - 4 or more axles; Oil spreader truck; Dump truck, 16 yds. to 25 yds. water level

GROUP 7: A Frame, Swedish crane or similar; Forklift driver; Ross carrier driver

GROUP 8: Dump truck, 25 yds. to 49 yds. water level; Truck repair person; Water pull - single engine; Welder

GROUP 9: Truck repair person/welder; Low bed driver, 9 axles or over

GROUP 10: Dump truck - 50 yds. or more water level; Water pull - single engine with attachment

GROUP 11: Water pull - twin engine; Water pull - twin engine with attachments; Winch truck driver - $1.25 additional when operating winch or similar special attachments

GROUP 12: Boom Truck 17K and above

WELDERS - Receive rate prescribed for craft performing

operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

SPECIAL PROVISIONS
PROPOSAL AND CONTRACT

TRAFFIC SIGNAL INSTALLATION AND STREET IMPROVEMENTS

FOR

AMETHYST RD AND HOOK BLVD INTERSECTION

PROJECT NUMBER:
2504500-55330-62025

AUGUST 10, 2015

Brian Gengler

Brian Gengler, P.E., City Engineer
RCE 44730

Date: 8-11-15

SECTION C-01

SPECIFICATIONS AND PLANS

Plans, Specifications and other Contract Documents shall govern the Work. The Contract Documents are intended to be complementary and cooperative. Anything specified in the Specifications and not shown on the Plans, or shown on the Plans and not specified in the Specifications, shall be as though shown on or specified in both. No deviations are to be made from the Plans or the Specifications without previous written authorization from the Engineer.

The Engineer may furnish additional details, when needed in the judgment of the Engineer, to more fully explain the Work, and the same shall be considered part of the Contract.

PRECEDENCE OF CONTRACT DOCUMENTS

In case of conflict between the Contract Documents, the document highest in precedence shall control. The precedence shall be as follows:

1) Permits issued by jurisdictional regulatory agencies;
2) Change Orders and/or Supplemental Agreements, whichever occurs last;
3) Contract;
4) Addenda;
5) Bid/Proposal;
6) Plans;
7) Special Provisions;
8) City of Victorville Standard Specification for Public Improvements latest edition;
9) Standard Plans of the California Department of Transportation latest edition including latest amendment at time of the bid (*Standard Plans*);
10) Standard Specifications of the California Department of Transportation latest edition including latest amendment at time of the bid (*Standard Specifications*);
11) California Manual on Uniform Traffic Control Devices, latest edition including latest amendment at time of the bid (*California MUTCD*);
12) APWA Standard Plans for Public Works Construction latest edition including latest amendment at time of the bid (*SPPWC*);
13) APWA Standard Specifications for Public Works Construction latest edition including latest amendment at time of the bid (*SSPWC*);
14) AWWA Standard Plans, latest edition;
15) AWWA Standard Specifications, latest edition.

Detail drawings shall take precedence over general drawings.

The Contractor shall keep a copy of these Special Provisions and Reference Material on him at all times and also the Contractor shall provide the most current reference material to the City prior to construction.

ACCURACY OF PLANS AND SPECIFICATIONS

The Plans show conditions as they are supposed or believed by the Engineer to exist, but it is not intended or to be inferred that the conditions as shown thereon constitute a representation or warranty, expressed or implied, by the City or its officers, that such conditions are actually existent, nor shall the City, or any of its officers, be liable for any loss sustained by the Contractor as a result of any variance between conditions as shown on the Plans, and the actual conditions revealed during progress of the Work or otherwise, except as indicated in Section 5-1.116, “Differing Site Conditions” of the Standard Specifications.

The Contractor shall carefully study and compare the Contract Documents with each other and with information available to the Contractor and furnished by the City and shall immediately notify the Engineer of errors, inconsistencies or omissions discovered.

If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency or omission in the Contract Documents without notice to the Engineer, the Contractor shall assume appropriate responsibility for such performance and shall assume responsibility for the full costs for correction.

The Contractor shall make field measurements, verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Engineer immediately.

Omissions from the Plans and Specifications shall not relieve the Contractor from the responsibility of furnishing, making, or installing all items required by law or usually furnished, made, or installed in a project of the scope and character indicated by the Plans and Specifications. If the Contractor is of the opinion that it will incur costs above and beyond what would reasonably be anticipated in meeting the above requirements, it shall inform the Engineer in writing within twenty (20) calendar days after discovering the omission and before starting the Work.

When existing conditions are encountered which, in the opinion of the Engineer, require temporary suspension of work for design modifications or for other determinations to be made, the Contractor shall move to other areas of work until such determinations are made at no cost to the City. The Contractor shall be allowed an adjustment in the Contract Price or an extension of the Contract Time, or both, directly attributable to any such suspension, if the Contractor makes an approved claim therefor as provided in Section 4-1.03 “Changes,” of the Standard Specifications.

SUBSURFACE CONDITIONS

Where investigations of subsurface conditions have been made by the City with respect to subsurface conditions, utilities, foundation, or other structural designs, and that information is shown in the Plans, it represents only a statement by the City as to the character of materials which have actually been encountered by the City’s investigation. This information is only included for the convenience of Bidders.

Investigations of subsurface conditions are made for the purpose of design only. The City assumes no responsibility with respect to the sufficiency or accuracy of borings or of the log of test borings or other preliminary investigations or of the interpretation thereof. There is no guaranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the Work, or any part of it, or that unanticipated conditions may not occur. When a log of test borings is included in the Plans or in these Special Provisions, it is expressly understood and agreed that said log of test borings does not constitute a part of the Contract. The log of test borings represents only an opinion of the City as to the character of the materials to be encountered, and is included in the Plans only for the convenience of the Bidders. Making information available to Bidders is not to be construed in any way as a waiver of the provisions of the first paragraph of this Sub-section, and Bidders must satisfy themselves through their own investigations as to conditions to be encountered.

RECORDS

The Contractor shall maintain all data and records pertinent to the Work performed under the Contract. The Contractor shall maintain cost accounting records for the contract pertaining to, and in such a manner as to provide a clear distinction between, the following 6 categories of costs of work during the life of the contract:

1) Direct costs of contract item work.

2) Direct costs of changes in character in conformance with Section 4-1.03C, "Changes in Character of Work," of the Standard Specifications.

3) Direct costs of extra work in conformance with Section 4-1.03D, "Extra Work," of the Standard Specifications.

4) Direct costs of work not required by the contract and performed for others.

5) Direct costs of work performed under a notice of potential claim in conformance with the provisions in Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications.

6) Indirect costs of overhead.

Cost accounting records shall include the information specified for daily extra work reports in Section 9-1.03C, "Records," of the Standard Specifications. The requirements for furnishing the Engineer completed daily extra work reports shall only apply to work paid for on a force account basis.

The cost accounting records for the contract shall be maintained separately from other contracts, during the life of the contract, and for a period of not less than 3 years after the date of acceptance of the contract. If the Contractor intends to file claims against the City of Victorville, the Contractor shall keep the cost accounting records specified above until complete resolution of all claims has been reached.

The Contractor shall covenant and agree that it shall require any subcontractor used in the performance of the Contract to permit the authorized representatives of the City, to similarly inspect and audit all data and records of the said subcontractors relating to the performance of the said subcontractors under Contract for the same period.

AS-BUILT DRAWINGS

Accurate and legible records shall be kept on a set of project full size drawings i.e, plans of all changes of work which occur during project construction. The Contractor shall record the location, by stationing to nearest foot, and the depth, by elevation to the nearest tenth of a foot (± 0.1'), of all utility underground lines, including valves, plugged tees, capped ends, etc. The Contractor shall record, by dimension and/or scale drawings, all wiring, conduits and pull boxes as actually installed. All information necessary to maintain and/or service any concealed work shall be noted on the record drawings. The locations by station of sewer laterals and water services that are not perpendicular to the main shall be noted on the record drawings. Records shall be kept up to date with all entries checked by the Engineer before the work is buried or covered up. Prior to field acceptance, the Contractor shall deliver this "As-Built" information to the Engineer. Contractor's failure to update and deliver "As-Built" information monthly to the Engineer will result in withholding of monthly progress payments.

PAYMENT

Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

SECTION C-02

BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

The first working day is the first calendar day after "Notice To Proceed" (NTP). Work at intersection shall commence no later than 15 days from the notice described herein.

The Contractor shall not begin work at the job site, except for measuring controlling field dimensions, until the following submittals are received, approved and/or accepted by the Engineer.

1) Baseline Progress Schedule (Critical Path Method).

2) Storm Water Pollution Prevention Plan (SWPPP).

3) Notice of Materials To Be Used.

The Contractor shall complete each portion of the Work within the time specified in these Special Provisions for such portion.

LIQUIDATED DAMAGES

Failure of the Contractor to complete the Work within **100 working days** from notice to proceed will result in damages being sustained by the City. Such damages are impracticable and extremely difficult to determine. For each consecutive calendar day in excess of the time specified above for completion of the Work, the Contractor shall pay to the City, or have withheld from monies due it, the sum of **$500**, unless otherwise specified elsewhere in these Special Provisions. Such sum is liquidated damages.

Execution of the Contract shall constitute agreement by the Contractor and the City that the liquidated damages are the minimum value of the costs and actual damage caused by the failure of the Contractor to complete the Work within the allotted time. Liquidated damages shall not be construed as a penalty, and may be deducted from payments due the Contractor if such delay occurs.

WORKING DAYS

Working day is time measure unit for work progress. A working day is any day except when the Contractor cannot perform work on the controlling activity for at least 50 percent of the day with at least 50 percent of the normal labor and equipment due to any of the following:

1) Saturdays

2) Sundays

3) Any day designated as a holiday by the City which are as follows:

A) New Year's Day	January 1st
B) Martin Luther King's Day	January 18th
C) Presidents' Day	February 15th
D) Cesar Chavez Day	March 31st
E) Memorial Day	May 25th
F) Independence Day	July 3th
G) Labor Day	September 7th
H) Veterans' Day	November 11th
I) Thanksgiving Day	November 27th
J) Day before Thanksgiving Day	November 26th
K) Christmas Eve	December 24th
L) Christmas Day	December 25th
M) New Year's Day	January 1st

4) Other days designated as holiday in a Master Labor Agreement entered into by the Contractor or on behalf of the Contractor an eligible member of a contractor association;

5) The Engineer's direction to suspend the controlling activities for reasons unrelated to the Contractor’s performance;

6) An unanticipated event not caused by either party such as:

A) Act of God (Pub Cont Code § 7105)
B) Act of a public enemy
C) Epidemic
D) Fire
E) Flood
F) Governor-declared state of emergency
G) Landslide
H) Quarantine restriction

7) An issue involving a third-party, including:

A) Industry or area-wide labor strike
B) Material shortage
C) Freight embargo
D) Jurisdictional requirement of a law enforcement agency
E) Workforce labor dispute of a utility or non-highway facility owner resulting in a utility or non-highway facility reconstruction not described and not solely for the Contractor's convenience

SECTION C-03

MEETINGS

MANDATORY PREBID MEETING

The City will not be conducting a mandatory prebid meeting for this contract.

PRE-CONSTRUCTION MEETING

After issuance of a "Notice To Proceed", a Pre-Construction Meeting will be conducted by the Engineer prior to commencement of construction at a time and place designated by the Engineer. The Contractor shall submit the baseline construction schedule to the Engineer a minimum of one week prior to this meeting or 2 weeks after contract award, whichever comes first. Those attending the meeting shall include, but not be limited to the following:

1) General Contractor & sub Contractors
2) City of Victorville Resident Engineer
3) City of Victorville Public Works Inspector
4) City of Victorville Senior Engineer
5) City of Victorville Traffic Engineer
6) Design Engineer
7) Affected Utility Companies Representatives

PROGRESS MEETINGS

The Contractor's job-site Foreman, Superintendent, Community Liaison and Project Engineer/Manager, shall attend all scheduled construction progress meetings and other project meetings as required by the Engineer. The City's Resident Engineer and/or Project Engineer will attend project meetings on an as-needed basis to address design issues. Construction progress meetings shall be weekly or as required by the Engineer. Other project meetings shall be scheduled at the sole discretion of the Engineer. The Engineer shall determine the date(s), time(s), and location(s) for all meetings. The Engineer will be responsible for the meeting agendas and meeting minutes. If any of the Contractor's staff cannot attend, the Contractor shall notify the Engineer a minimum of 24 hours in advance, prior to the start of the scheduled meeting. If the Contractor does not provide the required notification the Contractor will be financially responsible for the costs of City Staff and/or consultants that attend. The Contractor will be charged a minimum of two hours of the Engineer's time plus the time of other City employees or representatives that attend the meeting. Lack of participation from the Contractor will be documented and reported in the Contractor's performance evaluation.

PAYMENT

All costs associated with the Contractor's attendance of project meetings shall be included in the prices bid for the various items of work and no additional compensation will be paid. All costs assessed to the Contractor for not attending the meetings will be deducted from the monthly invoice.

SECTION C-04

PROJECT APPEARANCE – CONSTRUCTION STAGING AREA

The Contractor shall maintain a neat appearance to the work area

In areas visible to the public, the following shall apply:

1) When practicable, all debris developed during construction shall be disposed of concurrently with its production. If stockpiling is necessary, the material shall be removed or disposed of daily.

2) Trash bins shall be furnished for debris from structure construction. Debris shall be placed in trash bins daily. Forms or false-works that are to be re-used shall be stacked neatly concurrently with their removal. Forms and false-works that are not to be re-used shall be disposed of concurrently with their removal.

3) Material stockpile and storage at the jobsite and construction staging area shall be minimized to the extent possible. The Engineer shall approve material stockpile and storage location at the jobsite.

4) Under no circumstances, material stockpile and/or debris shall be placed on private properties along alignment.

5) Under no circumstances, any construction equipment or contractor's vehicle shall be parked or stored on private properties along alignment.

6) Construction staging area shall be fenced and secured at all times.

7) The construction staging area shall be cleaned by the contractor at the completion of the project.

GRAFFITI CONTROL

Throughout all phases of work, including suspension of work, and final acceptance, the Contractor shall keep all equipment, field offices, storage facilities, and other facilities free of graffiti. Graffiti shall be painted over, masked, or cleaned off within 24 hours after notification by the Engineer.

DRAINAGE CONTROL

The Contractor shall ensure that storm and drainage water does not pond due to the temporary blockage of existing drainage facilities. To this end, the Contractor shall provide temporary works that allow for the passage of storm and drainage water in a manner equivalent to the existing drainage system.

STAGING AREA

Construction staging area will not be provided as part of this project
Sanitary facilities shall be provided at the construction staging area if one is utilized.

CONSTRUCTION WATER

Construction water shall be provided at the nearest fire hydrant. The contractor shall obtain a construction water meter permit from the Water Department of the City of Victorville. A deposit will be needed; and water usage fees shall be required.

PAYMENT

Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

SECTION C-05

PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS

Attention is directed to Section 7-1.11, "Preservation of Property," of the Standard Specifications and these special provisions.

The Contractor shall be responsible for the protection of public and private property adjacent to the Work and shall exercise due caution to avoid damage to such property.

Existing trees, lawns, shrubs and other plants, that are not to be removed as shown on the plans or specified in these special provisions, and are injured or damaged by reason of the Contractor's operations, shall be replaced by the Contractor. The minimum size of tree replacement shall be 24-inch box and the minimum size of shrub replacement shall be 15-gallon. Lawns shall be reseeded and covered with suitable mulch. Replacement ground cover plants shall be from flats and shall be planted 12 inches on center. Replacement of Carpobrotus ground cover plants shall be from cuttings and shall be planted 12 inches on center. Replacement planting shall conform to the requirements in Section 20-4.07, "Replacement," of the Standard Specifications. The Contractor shall water replacement plants in conformance with the provisions in Section 20-4.06, "Watering," of the Standard Specifications.

The Contractor shall give ten (10) working days written notice to occupants or owners of adjacent property to permit them to salvage or relocate plants, trees, fences, sprinklers, and other improvements, within the right-of-way which are designated for removal and would be destroyed because of the work.

Damaged or injured plants shall be removed and disposed of in conformance with the provisions in Section 7-l.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications. At the option of the Contractor, removed trees and shrubs may be reduced to chips.

(Use when there is a plant establishment period. Delete Para 5 when Para 4 is used.)
(Use when there is no plant establishment period. Delete Para 4 when Para 5 is used.)
Replacement planting of injured or damaged trees, shrubs and other plants shall be completed not less than 20 working days prior to completion and as directed by the Engineer. Replacement plants shall be watered as necessary to maintain the plants in a healthy condition until acceptance of the contract.

Contractor shall only perform work in the specified Right-of Way and for no reason store material or Perform work on Private Property, The Contractor shall not trespass on private property. The contractor shall also travel on established roadways as shown on the provided plans.

PAYMENT

Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

SECTION C-06

PUBLIC SAFETY

The Contractor shall provide for the safety of traffic and the public in conformance with the provisions in Section 7-1.09, "Public Safety," of the Standard Specifications and these special provisions.

The Contractor shall install temporary railing (Type K) between a lane open to public traffic and an excavation, obstacle or storage area when the following conditions exist:

A. Excavations **-** The near edge of the excavation is 12 feet or less from the edge of the lane, except:

1. Excavations covered with sheet steel or concrete covers of adequate thickness to prevent accidental entry by traffic or the public.
2. Excavations less than one foot deep.
3. Trenches less than one foot wide for irrigation pipe or electrical conduit, or excavations less than one foot in diameter.
4. Excavations parallel to the lane for the purpose of pavement widening or reconstruction.
5. Excavations in side slopes, where the slope is steeper than 4:1 (horizontal : vertical).
6. Excavations protected by existing barrier or railing.

B. Temporarily Unprotected Permanent Obstacles - The work includes the installation of a fixed obstacle together with a protective system, such as a sign structure together with protective railing, and the Contractor elects to install the obstacle prior to installing the protective system; or the Contractor, for the Contractor's convenience and with permission of the Engineer, removes a portion of an existing protective railing at an obstacle and does not replace such railing complete in place during the same day.

C. Storage Areas - Material or equipment is stored within 12 feet of the lane and the storage is not otherwise prohibited by the provisions of the Standard Specifications and these special provisions.

The approach end of temporary railing (Type K), installed in conformance with the provisions in this section "Public Safety" and in Section 7-1.09, "Public Safety," of the Standard Specifications, shall be offset a minimum of 15 feet from the edge of the traffic lane open to public traffic. The temporary railing shall be installed on a skew toward the edge of the traffic lane of not more than one foot transversely to 10 feet longitudinally with respect to the edge of the traffic lane. If the 15 foot minimum offset cannot be achieved, the temporary railing shall be installed on the 10 to 1 skew to obtain the maximum available offset between the approach end of the railing and the edge of the traffic lane, and an array of temporary crash cushion modules shall be installed at the approach end of the temporary railing.

Except for installing, maintaining and removing traffic control devices, whenever work is performed or equipment is operated in the following work areas, the Contractor shall close the adjacent traffic lane unless otherwise provided in the Standard Specifications and these special provisions:

Approach Speed of Public Traffic (Posted Limit) (Miles Per Hour)	Work Areas
Over 45	Within 6 feet of a traffic lane but not on a traffic lane
35 to 45	Within 3 feet of a traffic lane but not on a traffic lane

The lane closure provisions of this section shall not apply if the work area is protected by permanent or temporary railing or barrier.

When traffic cones or delineators are used to delineate a temporary edge of a traffic lane, the line of cones or delineators shall be considered to be the edge of the traffic lane, however, the Contractor shall not reduce the width of an existing lane to less than 10 feet without written approval from the Engineer.

When work is not in progress on a trench or other excavation that required closure of an adjacent lane, the traffic cones or portable delineators used for the lane closure shall be placed off of and adjacent to the edge of the traveled way. The spacing of the cones or delineators shall be not more than the spacing used for the lane closure.
Suspended loads or equipment shall not be moved nor positioned over public traffic or pedestrians.

PAYMENT

Full compensation for conforming to the provisions in this section "Public Safety," including furnishing and installing temporary railing (Type K) and temporary crash cushion modules, shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefore.

SECTION C-07

TEMPORARY TRAFFIC CONTROL

Maintaining traffic shall conform to the provisions in Sections 7-1.08, "Public Convenience," Section 7-1.09, "Public Safety," and Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications, California Manual on Uniform Traffic Control Devices, Part 6, latest edition and these Special Provisions.

TEMPORARY TRAFFIC CONTROL PLAN (TTCP)

A detailed "Temporary Traffic Control Plan" for moving traffic through or around the construction zone shall be prepared by the Contractor to assure that adequate consideration is given to the safety and convenience of motorists, pedestrians and workers during construction. The Contractor shall submit TTCP to the Engineer for approval prior to start of construction. The plan shall be consistent with the requirements of the latest edition of "California Manual on Uniform Traffic Control Devices," part 6.

The Contractor may develop alternate TTCP if a change in condition or situation arises. Such alternate plans shall be submitted to the Engineer before implementation.

The Contractor shall designate in writing a "Safety Coordinator" (Traffic Control Devices Maintenance Monitor). The name and phone number of the Contractor's "Safety Coordinator" shall be provided to the Engineer before start of construction. The Contractor's "Safety Coordinator" shall be available at any time from the start of construction to the completion. The Contractor shall immediately notify the Engineer of any changes in assigned personnel or phone numbers.

GENERAL REQUIREMENTS

The following are general temporary traffic control requirements:

1) The Contractor shall be responsible for the installation and maintenance of the traffic control devices shown in the latest edition of "California Manual on Uniform Traffic Control Devices", approved TTCP, and any additional traffic control devices required by the Engineer to insure the safety of the public and the workers.

2) The Contractor shall insure that all traffic control devices are kept in their proper position at all times and repaired, replaced and cleaned as necessary to preserve their appearances and continuity.

3) The Engineer reserves the right to observe the TTCP in use and to make any changes required by field conditions.

4) All temporary traffic control devices shall be removed following completion of each construction stage and permanent traffic control devices shall be restored by the Contractor prior to the completion.

5) The Contractor shall notify Victor Valley Transit Authority 10 working days prior to the start of construction if relocation of a bus stop(s) is required.

TRAFFIC AND ACCESS

The Contractor's operations shall cause no unnecessary inconvenience. The access rights of the public shall be considered at all times. Unless otherwise authorized in writing by the Engineer prior to start of Work, traffic shall be permitted to pass through the Work, or an approved detour shall be provided by the Contractor at its own cost.

Safe and adequate pedestrian and vehicular access shall be provided and maintained to: fire hydrants; commercial and industrial establishments; churches, schools and parking lots; service stations, hotels

and motels; hospitals; police and fire stations; residences; and establishment of similar in nature. Access to these facilities shall be continuous and unobstructed unless otherwise authorized in writing by the Engineer prior to start of Work.

At least 10 calendar days before the start of construction, the Contractor shall notify, in writing, abutting property occupants of the proposed construction start date. A copy of said written notification shall be provided to the Engineer for approval before they are distributed to the occupants of abutting property.

Safe and adequate pedestrian zones and public transportation stops, as well as pedestrian crossings of the Work at intervals not to exceed 300 feet, shall be maintained unless otherwise authorized in writing by the Engineer prior to start of Work.

Vehicular access to residential driveways shall be maintained to the property line except when necessary construction precludes such access for reasonable periods of time. If backfill has been completed to the extent that safe access may be provided, and the street is opened to local traffic, the Contractor shall immediately clear the street and driveways and provide and maintain access.

The Contractor shall cooperate with the various parties involved in the delivery of mail and the collection and removal of trash and garbage to maintain existing schedules of these services.

Grading operations, roadway excavation and fill construction shall be conducted by the Contractor in a manner to provide a reasonably satisfactory surface for traffic. When rough grading is completed, the roadbed surface shall be brought to a smooth, even condition satisfactory for traffic.

Unless otherwise authorized in writing by the Engineer prior to start of Work, work shall be performed in only one-half the roadway at one time. One half shall be kept open and unobstructed until the opposite side is ready for use. If one-half a street only is being improved, the other half shall be conditioned and maintained as a detour.

STREET CLOSURES, DETOURS, AND BARRICADES

The Contractor shall comply with all applicable State, County and City requirements for closure of streets. The Contractor shall provide barriers, guards, lights, signs, temporary bridges, flag-persons, and watchpersons. The Contractor shall be responsible for compliance with additional public safety requirements which may arise. The Contractor shall furnish, install signs and warning devices and promptly removed them upon completion of the Work.

At least 48 hours in advance of closing, partially closing or reopening, any street, alley, or other public thoroughfare, the Contractor shall notify the Police and Fire Departments and comply with their requirements. Deviation must first be approved in writing by the Engineer.

PAYMENT

Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

SECTION C-08

NOISE CONTROL REQUIREMENTS

Sound control shall conform to the provisions in Section 7-1.01I, "Sound Control Requirements," of the Standard Specifications and these special provisions.

The noise level from the Contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m., shall not exceed 86 dBa at a distance of 50 feet from the work site if the work site is located within 200 feet of a residential dwelling. This requirement shall not relieve the Contractor from responsibility for complying with local ordinances regulating noise level.

The noise level requirement shall apply to the equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by the Contractor. The use of loud sound signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel.

PAYMENT

Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

SECTION C-09

LANDS AND RIGHTS-OF-WAY

Right of Way, easements or right-of-entry for the Work will be provided by the City of Victorville. Unless otherwise provided, the Contractor shall make arrangements, pay for, and assume all responsibility for acquiring, using, and disposing of additional Work areas and facilities temporarily required. The Contractor shall indemnify and hold the City harmless from all claims for damages caused by such actions.

The Contractor shall not allow his employees to use private property for any reason or to use water or electricity from such property without written permission from the owner. The Contractor shall provide evidence of such permission in writing to the Engineer before entering upon such lands. In performing any work or doing any activity on lands outside the public right of way, the Contractor shall comply with all applicable Federal, state and local laws, ordinances, codes and regulations. The Contractor shall indemnify and hold the City harmless from all claims or suits for damages occasioned by such work or activity, whether done according to this subsection and with permission from the owner or in violation of this subsection without permission from the owner.

SECTION C-10

DUST CONTROL

The contractor shall at all times provide for the abatement of nuisance dust in accordance with the provisions of Section 10, "Dust Control", of the Standard Specifications. When required by the Engineer, the contractor shall furnish and operate a self-loading motor sweeper with spray nozzles as often as necessary to keep paved areas acceptably clean wherever construction, including restoration, is incomplete.

All active construction areas shall be watered a minimum of four (4) times per day or as required by the Engineer, the first in the morning before construction proceeds, and the last after cessation of construction activities for the day. Stabilization by use of chemical or physical covering shall be required for stockpiles which are exposed and un-worked for more than two (2) weeks.

PAYMENT

Dust control as herein provided shall be considered a supplementary obligation of the contractor as provided for in Section A-3.02, "Work Not Listed in Proposal", of these Special Provisions.

SECTION C-11

MOBILIZATION & DEMOBILIZATION

Mobilization and demobilization work shall conform to the provisions in Section 11, "Mobilization," of the Standard Specifications and these special provisions. Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the project site; for the establishment of all offices, buildings and other facilities necessary for work on the project; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site. Demobilization shall consist of removal of all personnel, equipment, supplies and incidentals away from the project site after the completion of the project.

PAYMENT

The Lump Sum price paid for "Mobilization & Demobilization" shall include full compensation for furnishing all labor, materials, tools and equipment and incidentals, and for doing all the work involved in mobilization and demobilization as specified herein and in Standard Specifications. No additional compensation will be allowed.

Payment for mobilization will be made as follows:

1. When the monthly partial payments estimates of the amount earned, not including the amount for "Mobilization and Demobilization," is 5% or more of the original contract amount, Fifty percent (50%) of the contract item price for "Mobilization and Demobilization" will be included in the monthly estimate payment.

2. Thereafter, thirty percent (30%) of the contract item price for "Mobilization and Demobilization" will be paid over the remainder of the contract duration in equal monthly progress payment.

3. After acceptance of the contract in conformance with the provisions in Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, payment for the remaining twenty percent (20%) of the contract item price for "Mobilization and Demobilization" will be made in conformance with the provisions in Section 9-1.07A, "Payment Prior to Proposed Final Estimate."

When the contract does not include a contract pay item for "Mobilization & Demobilization" as above specified, full compensation for any necessary mobilization and demobilization required shall be considered as included in the prices paid for the various contract items of Work involved and no additional compensation will be allowed therefor.

SECTION C-12

INSPECTION AND TESTING

INSPECTION

The inspection of the Work or materials shall not relieve the Contractor of any of the Contractor's obligations to fulfill all of the requirements of the Contract as prescribed. Any work, materials, or equipment not meeting the requirements and intent of the Contract will be rejected, and unsuitable work or materials shall be made good, notwithstanding the fact that such work or materials may have previously been inspected or approved and payment may have been made.

Projects financed in whole or in part with Federal or State funds shall be subject to inspection at all times by the Federal or State agencies involved.

Reexamination of any part of the Work may be ordered by the Engineer, and such part of the Work shall be uncovered by the Contractor. The Contractor shall pay the entire cost of such uncovering, reexamination, and replacement if the reexamined work does not conform to the Contract.

All work and materials furnished pursuant to the Contract shall be subject to inspection and approval by the Engineer. The Contractor shall provide the Engineer with access to the Work during construction and shall furnish every reasonable facility and assistance for ascertaining that the materials and the workmanship are in accordance with the requirements and intent of the Contract. The Contractor shall provide safety equipment, material, and assistance to the Engineer to properly inspect all phases of the Work, including final inspection. Such equipment, material, and assistance shall include, but not limited to testing for the presence of explosive or toxic gases and oxygen deficiency in confined spaces, blowers, ventilators, first aid supplies and equipment, ladders, scaffolds, shoring, harnesses, self contained breathing apparatus, and personnel for standby assistance, as required. Personal equipment and clothing, such as hard hats, safety glasses, traffic vests and earplugs are not subject to these provisions.

Unless authorized in writing by the Engineer, any work done in the absence of the Engineer, whether completed or in progress, shall be subject to inspection. The Contractor shall furnish all tools, labor, materials, access facilities, and other facilities necessary to allow such inspection, even to the extent of uncovering or taking down completed portions of the Work. The Contractor shall pay all costs incurred, whether or not any defective work is discovered.

The Contractor shall also be solely responsible for any costs associated with the removal of any defective work discovered during the inspection and the complete cost of reconstruction. The Contractor shall notify the Engineer of the time and place of any factory tests and submit test procedures for approval twenty (20) Calendar Days in advance for any tests that are required by the Contract. The Contractor shall report the time and place of preparation, manufacture or construction of any material for the Work, or any part of the Work, that the Engineer wishes to inspect. The Contractor shall give five (5) Working

Days notice in advance of the beginning of work on any such material or of the beginning of any such test to allow the Engineer to make arrangements for inspecting and testing or witnessing.

Unless otherwise specified in these Special Provisions, inspection is required at the source for hot mix asphalt pavement, structural concrete, metal fabrication, metal casting, welding, concrete pipe manufacturing, protective coating application, and similar shop or plant operations. Additional materials and fabricated items which require inspection at the source shall be as specified elsewhere in this Special Provisions.

The City will provide all source inspection and testing laboratory services within 50 miles of the geographical City limits. When the Contractor intends to purchase materials, fabricated products, or equipment from sources located more than 50 miles outside of the geographical City Limit, an inspector or accredited testing laboratory, approved by the Engineer, shall be egaged by the Contractor at its expense, to inspect the materials, equipment or process. This approval shall be obtained before producing any material or equipment. The inspector or representative of the testing laboratory shall evaluate the materials for conformance with the requirements of Plans and Specifications. The Contractor shall forward reports required by the Engineer. No materials or equipment shall be shipped nor shall any processing, fabrication or treatment of such materials be done without proper inspection by the approved agent. Approval by said agent shall not relieve the Contractor of responsibility for complying with the requirements of the Contract Documents.

Substantial Completion

When the Contractor considers the entire Work, or a specific portion of the Work, substantially complete, the Contractor shall certify in writing to the Engineer that the Work is substantially complete and request that the City grant substantial completion. Within five (5) Working Days, the Engineer and the Contractor shall inspect the Work to determine the status of completion. If the Engineer does not consider the entire Work, or a specific portion of the Work, substantially complete, the Engineer will notify the Contractor in writing, giving the Engineer's reasons. If the Engineer considers the entire Work, or a specific portion of the Work, substantially complete, the Engineer will grant substantial completion. The counting of time for liquidated damages will cease for the entire Work, or a specific portion of the Work, on the date substantial completion is granted, but shall not bind the City to formal acceptance nor relieve the Contractor from the responsibility of completing or correcting any work.

Unless otherwise specified in these Special Provisions, the entire Work, or a specific portion of the Work, will be considered substantially complete when all work depicted on the contract drawings and required by the Contract Documents has been performed. Only minor corrective work will be allowed to be considered as punch list work. The Engineer will provide a list of items to be completed or corrected (punch list) before Final Acceptance and Final Payment. The contractor shall provide the level of effort and resources necessary to complete the defects or deficiencies (punch-list) within thirty (30) calendar days. Unless otherwise agreed to by the Engineer, the City is authorized to perform the work if the contractor fails to complete the punch-list within thirty (30) calendar days. All costs incurred by the City to correct the defects or deficiencies, including loss of use, inspection and administration costs, will be deducted from the final project payment via a deductive change order.

Final Inspection and Field Acceptance

The Contractor shall notify the Engineer in writing of the completion of the punch list per "Substantial Completion", of these Special Provisions, and the Engineer shall promptly inspect the Work. The Contractor or the Contractor's representative shall be present at the final inspection. The Contractor will be notified in writing of any defects or deficiencies. The Contractor shall provide the level of effort and resources necessary to complete the defects or deficiencies within twenty (20) calendar days of such notification. Unless otherwise agreed to by the Engineer, the City is authorized to perform the work if the contractor fails to complete the defects or deficiencies within twenty (20) calendar days. All costs incurred

by the City to correct the defects or deficiencies, including loss of use, inspection and administration costs will be deducted from the final project payment via a deductive change order. When notified that correction of the defective or deficient work is complete, the Engineer will again inspect the Work to ascertain that the corrections are in accordance with the Contract. The Engineer will issue a field acceptance letter and will recommend final acceptance of the Work if it finds all the corrections acceptable. Field acceptance by the Engineer shall cause the commencement of warranty periods, but shall not bind the City to final acceptance nor relieve the Contractor from the responsibility of completing or correcting any work.

TESTING

Testing of materials and work shall conform to the provisions in Section 6-3, "Testing," of the Standard Specifications and these Special Provisions.

Whenever the provisions of Section 6-3.01, "General," of the Standard Specifications refer to tests or testing, it shall mean tests to assure the quality and to determine the acceptability of the materials and work.

Sampling and testing of materials for determination of compliance with the specified compaction requirements will be conducted by the Engineer at any location and time as the Engineer may determine.

Compaction testing shall be performed by a testing laboratory approved by the Engineer. The Contractor shall schedule compaction testing with the Engineer a minimum of 48 hours in advance of the time of testing.

The Contractor shall be responsible for excavation of the test pits and for providing and installing any shoring, ladders, or other equipment necessary to protect the testing personnel. The Contractor shall also suspend operations as necessary and at no cost to the owner for the purpose of conducting such testing.

Test pits shall be excavated in the backfill by the Contractor as directed by the Engineer for the purpose of testing the backfill compaction. At the option of Engineer, density tests may be taken on a lift of compacted backfill immediately before placing the next lift.

Any settlement noted in backfill, fill, or in structures built over the backfill or fill within the one-year warranty period will be considered to be caused by improper compaction methods and shall be corrected at the Contractor’s expense. Structures damaged by settlement shall be restored to their original condition by the Contractor at the Contractor’s expense.

When initial compaction testing performed by the Engineer indicates the required density has not been obtained, the Contractor shall re-compact or replace the backfill as necessary to meet the specified minimum density.

The Contractor shall be responsible for rescheduling compaction testing with the Engineer and shall bear all costs for subsequent retesting in the areas of noncompliance. Costs associated with retesting and scheduling delays shall be the sole responsibility of the Contractor. The Engineer will deduct the costs for testing of materials and work found to be unacceptable, as determined by the tests performed by the City and the costs for testing of material sources identified by the Contractor which are not used for the work, from moneys due or to become due to the Contractor. The amount deducted will be determined by the Engineer.

SECTION C-13

COOPERATION AND COORDINATION WITH UTILITY COMPANIES

Attention is directed to Section 7-1.14, "Cooperation," and Section 8-1.10, "Utility and Non-Highway Facilities," of the Standard Specifications and these special provisions.

> Attention is directed to the existence of certain underground and overhead facilities that may require special precautions be taken by the Contractor to protect the health, safety and welfare of workers and of the public. Facilities requiring special precautions include, but are not limited to: conductors of petroleum products, oxygen, chlorine, and toxic or flammable gases; natural gas in pipelines greater than 6 inches in diameter or pipelines operating at pressures greater than 60 pounds per square inch (gage); underground electric supply system conductors or cables, with potential to ground of more than 300 V, either directly buried or in a duct or conduit which do not have concentric grounded or other effectively grounded metal shields or sheaths.

Use when any underground utility is on the project. If the project is a Special Project as defined in the High Risk Policy, and the project has high risk facilities, change "2 working days", as required, to allow sufficient time for the owner to locate the high risk facility and add SSP 08-025 or SSP 08-026 and any other special requirements.

The Contractor shall notify the Engineer and the Underground Service Alert - Southern California (USA) at (800) 422-4133 or (800) 227-2600 at least 2 working days, but not more than 14 calendar days, prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire or other structure.

Utility Companies and/or their contractors may be rearranging (as used herein, rearrangement includes installation, relocation, alteration or removal) their facilities adjacent to or within the limits of this project during progress of the work on this project.

The number of working days shown must include any lead time needed by the utility prior to start of work. If it is not obvious from the plans at what stage the utility work is to be done, indicate in the special provisions when the Contractor is allowed time for installation.

Rearrangement of the utility facilities will require coordination and cooperation between the Contractor and Utility Companies. The Contractor shall make the necessary arrangements with the utility companies and shall submit a schedule of work, verified and agreed upon by Utility Companies.

PROTECTION OF UTILITY FACILITIES

The Contractor is responsible for protection of all utility mains, services and other facilities within the limits of work. Responsible diligence has been exercised by the City in locating utilities, but the Contractor is responsible for checking in the field the locations as shown and is further responsible for the protection of any and all utilities whose presence or location is unknown.

The contractor shall not interrupt the service function of the utility lines, when working on or around active utility lines. The contractor shall apply protective measures not to damage or interrupt the function of such lines without written authority from the utility company or written order from the Engineer prior to such work. All valves, switches, vaults, and meters shall be maintained readily accessible for emergency shutoff.

Upon learning of the existence and location of any utility omitted from or shown incorrectly on the Plans, the Contractor shall immediately notify the Engineer and utility company and be fully responsible for protecting such utility.

The Contractor shall immediately notify the Engineer and the utility company if any utility is disturbed, disconnected or damaged. The Contractor shall bear the costs of repair or replacement of any utility damaged.

The Contractor shall not make any claim for inconvenience, delay or added cost of performing the work which may be attributed in any degree to inaccuracy of information furnished by the City relative to the locations, sizes, dimensions, depths, and character of any pipes, conduits, poles, or other structures and utilities or for failure of the City to furnish any information relative thereto.

DELAYS

The Contractor is responsible for notifying utility companies in time to prevent delays attributable to utility relocations or alterations. The Contractor shall not be entitled to damages or additional payment if such delay does occur. The Engineer will determine the extent of the delay attributable to such interference, the effect of the delay on the project as a whole, and any commensurate extension of time.

LIMITATIONS OF LIABILITY

The City and the Engineer assume no responsibility or liability with respect to the sufficiency or accuracy of the information or investigation of the location of utility facilities made by it, or with respect to the actual or apparent location of all known utility facilities as indicated on the Plans, or with respect to unforeseen developments which may occur as to the location of such utility facilities, or with respect to utility facilities which may be encountered at places different from that indicated.

PAYMENT

Full compensation for conforming to the requirements of this section shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

SECTION C-14

PAYMENT

GENERAL

The quantities listed in the Proposal will not govern final payment. Payment to the Contractor will be made only for actual quantities of the contract items constructed in accordance with the Contract Documents. Upon completion of the Work, if the actual quantities show either an increase or decrease from the quantities in the Proposal, the contract unit prices will prevail except as otherwise indicated elsewhere in these Special Provisions.

The unit and lump sum prices to be paid shall be full compensation for the items of work and all appurtenant work, including furnishing all materials, labor, equipment, tools, and incidentals. When an item of work is not listed in “Bid Proposal”, the cost of of such work shall be considered to be included in the cost of the other work that is listed.

Payment will not be made for materials wasted or disposed of in a manner not called for under the Contract. This includes rejected material prior to installation, material rejected after it has been placed,

and material placed outside of the plan lines. No compensation will be allowed for disposing of rejected or excess material.

Payment shall not relieve the Contractor from its obligations under the Contract; nor shall such payment be construed to acceptance of any of the Work. Payment shall not be construed as transfer of ownership of any equipment or materials to the City. Responsibility of ownership shall remain with the Contractor who shall be obligated to store any fully or partially completed work or for which payment has been made or replace any materials or equipment require to be provided under the Contract which may be damaged, lost or stolen or otherwise degraded in anyway prior to acceptance of the Work unless otherwise indicated elsewhere in these Special Provisions.

Warranty periods shall not be affected by any payment.

WORK PERFORMED BY THE CITY

If immediate action is required to prevent injury, death, or property damage, and precautions which are the Contractor's responsibility have not been taken and are not reasonably expected to be taken, the City may, after reasonable attempt to notify the Contractor, cause such precautions to be taken and shall charge the cost thereof against the Contractor, or may deduct such cost from any amount due or become due from the City. The City's action or inaction under such circumstances shall not construed as relieving the Contractor and/or its Surety from liability.

Whenever any portion of the Work is performed by the City at the request of the Contractor, the cost thereof shall be charged against the Contractor, and may be deducted from any amount due or becoming due from the City.

PARTIAL MONTHLY PAYMENT AND FINAL PAYMENT

The closure date for the purpose of making monthly progress payment shall be 20th day of the month. Each month, the Engineer will make an approximate measurement of the work performed to the closure date and as a basis for making monthly payments, estimate its value based on Contract Unit Prices. When the Work has been satisfactorily completed, the Engineer will determine the quantity of work performed and prepare the final estimate.

From each progress estimate, 10 percent will be deducted and retained by the City, and the remainder less the amount for all previous payment will be paid. The City will not reduce 10 percent retention.

If, within the time fixed by law, a properly executed notice to stop payment is filed with the City, due to the Contractor's failure to pay for labor or materials used in the Work, all money due for such labor or materials will be withheld from payment to the Contractor in accordance with applicable laws.

At the expiration of 35 days from the date of acceptance of the Work by the City Council, or as prescribed by law, the amount deducted from the final estimate and retained by the City will be paid to the contractor except such amounts as are required by law to be withheld by properly executed and filed notices to stop payment, or as may be authorized by the Contractor to be further retained.

No progress payment made to the contractor or its Sureties will constitute a waiver of liquidated damages as specified in Section entitled "Beginning of Work, Time of Completion and Liquidated Damages" of these Special Provisions.

DELIVERED MATERIALS / MATERIALS ON-HAND

The cost of materials and equipments delivered to the site and not incorporated into the Work may be included in the monthly progress payment.

PAYMENT

Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

SECTION C-15

WATER POLLUTION CONTROL

Water pollution control work shall conform to the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications and these special provisions. The Contractor shll implement conform to all applicable local, state and Federal regulations and laws pretaining to water pollution control.

The Contractor shall conduct and schedule its operation, and take precaution to protect channels, storm drains and bodies of water from pollution. These precautions shall include conducting and scheduling operations to minimize or avoid muddying and silting of channels, storm drains and bodies of water. Water pollution work shall also consist of implementing good housekeeping pollution control measures to reduce the discharge of pollutants from worksites to maximum practicable extent. Such features as drainage gutters, slope protection blankets, and retention basins shall be constructed concurrently with other work and at the earliest practicable time. The Contractor shall exercise care to preserve vegetation beyond the limits of the work.

The Contractor shall designate in writing a qualified, trained and competent person as Water Pollution Control Manager (WPCM). The WPCM shall be:

A. Responsible for water pollution control work.
B. The primary contact for water pollution control work.
C. Have authority to mobilize crews to make immediate repairs to water pollution control practices.

The Contractor may designate one manager to prepare the Water Pollution Control Plan (WPCP) and a different manager to implement the plan.

Water Pollution Control Plan (WPCP)

The Contractor shall prepare and submit a Water Pollution Control Plan (WPCP) to the Engineer for approval. The WPCP shall conform to the requirements in the Preparation Manual, the NPDES permit, and these special provisions. The WPCP shall be submitted in place of the water pollution control program required by the provisions in Section 7-1.01 G, "Water Pollution," of the Standard Specifications. The WPCP shall include water pollution control practices:

A. For storm water and non-storm water from areas outside of the job site related to construction activities for this contract such as:

    1. Staging areas.
    2. Storage yards.
    3. Access roads.

B. Appropriate for each season as described in "Implementation Requirements" of these Special provisions.
C. For activities or mobile operations related to all NPDES permits.

The WPCP shall include a schedule that:

A. Describes when work activities that could cause water pollution will be performed.
B. Identifies soil stabilization and sediment control practices for disturbed soil area.
C. Includes dates when these practices will be 25, 50, and 100 percent complete.
D. Shows 100 percent completion of these practices before the rainy season.

The WPCP shall include the following temporary water pollution control practices and their associated contract items of work as shown on the plans or specified in these special provisions:

A. Temporary Soil Stabilization
B. Temporary Sediment Control
C. Tracking Control
D. Wind Erosion Control
E. Non-Storm Water Management
F. Waste Management and Materials Pollution Control

Within 10 days after the Notice To Proceed, the Contractor shall submit 3 copies of the WPCP to the Engineer. The Contractor shall allow 10 days for the Engineer's review. If revisions are required, the Engineer will provide comments and specify the date that the review stopped. The Contractor shall revise and resubmit the WPCP within 10 days of receipt of the Engineer's comments. The Engineer's review will resume when the complete WPCP is resubmitted. When the Engineer approves the WPCP, the Contractor shall submit 4 copies of the approved WPCP to the Engineer. The Contractor may proceed with construction activities if the Engineer conditionally approves the WPCP while minor revisions are being completed.

The Contractor shall not perform work that may cause water pollution until the WPCP has been approved by the Engineer. The Engineer's review and approval shall not waive any contract requirements and shall not relieve the Contractor from complying with Federal, State and local laws, regulations, and requirements.

The Contractor shall amend the WPCP annually and shall resubmit it to the Engineer 20 days before the defined rainy season.

If there is a change in construction schedule or activities, the Contractor shall prepare an amendment to the WPCP to identify additional or revised water pollution control practices. The Contractor shall submit the amendment to the Engineer for review within a time agreed to by the Engineer not to exceed the number of days specified for the initial submittal of the WPCP.

The Engineer will review the amendment within the same time allotted for the review of the initial submittal of the WPCP.

If directed by the Engineer or requested in writing by the Contractor and approved by the Engineer, changes to the water pollution control work specified in these special provisions would be allowed. Changes may include addition of new water pollution control practices. The Contractor shall incorporate these changes in the WPCP.

The Contractor shall keep a copy of the approved WPCP at the job site. The WPCP shall be made available when requested by a representative of the Regional Water Quality Control Board, State Water Resources Control Board, United States Environmental Protection Agency, or the local storm water management agency. Requests from the public shall be directed to the Engineer.

IMPLEMENTATION REQUIREMENTS

The Contractor shall construct, inspect, maintain, remove, and dispose of the water pollution control practices.

The Contractor's responsibility for WPCP implementation shall continue throughout any temporary suspension of work ordered in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications.

If the Contractor or the Engineer identifies a deficiency in the implementation of the approved WPCP, the deficiency shall be corrected immediately, unless an agreed date for correction is approved in writing by the Engineer. The deficiency shall be corrected before the onset of precipitation. If the

Contractor fails to correct the deficiency by the agreed date or before the onset of precipitation, the City may correct the deficiency and deduct the cost of correcting deficiencies from payments.

If the Contractor fails to conform to the provisions of this section, "Water Pollution Control," the Engineer may order the suspension of work until the project complies with the requirements of this section.

The Contractor shall construct permanent water pollution control items identified in the WPCP. The Contractor shall maintain the permanent water pollution control items in the locations and condition shown on the plans throughout the duration of the project.

YEAR-ROUND - The Contractor shall monitor the National Weather Service weather forecast on a daily basis during the contract. Appropriate water pollution control practices shall be in place before precipitation.

The Contractor may discontinue earthwork operations for a disturbed area for up to 21 days and the disturbed soil area will still be considered active. When earthwork operations in the disturbed area have been completed, the Contractor shall implement appropriate water pollution control practices within 15 days, or before predicted precipitation, whichever occurs first.

RAINY SEASON - The Contractor shall provide soil stabilization and sediment control practices during the rainy season between August 1 and October 1, and between November 1 and May 1.

The Contractor shall provide soil stabilization and sediment control practices during the rainy season. The Contractor shall implement soil stabilization and sediment control practices a minimum of 10 days before the start of the rainy season.

During the defined rainy season, the active disturbed soil area of the project site shall be not more than 10 acres. The Engineer may approve expansions of the active disturbed soil area limit if requested in writing. The Contractor shall maintain soil stabilization and sediment control materials on site to protect disturbed soil areas.

INSPECTION AND MAINTENANCE - The WPCM shall inspect the water pollution control practices identified in the WPCP as follows:

A. Before a forecasted storm,
B. After precipitation that causes site runoff,
C. At 24-hour intervals during extended precipitation,
D. On a predetermined schedule, a minimum of once every two weeks outside of the defined rainy season, and
E. On a predetermined schedule, a minimum of one week during the defined rainy season.

The WPCM shall oversee the maintenance of the water pollution control practices.

The WPCM shall use the Storm Water Quality Construction Site Inspection Checklist provided in the Preparation Manual or an alternative inspection checklist provided by the Engineer. A copy of the completed site inspection checklist shall be submitted to the Engineer within 24 hours of finishing the inspection.

REPORTING REQUIREMENTS - If the Contractor identifies discharges into surface waters or drainage systems causing or potentially causing pollution, or if the project receives a written notice or order from a regulatory agency, the Contractor shall immediately inform the Engineer. The Contractor shall submit a written report to the Engineer within 7 days of the discharge, notice or order. The report shall include the following information:

A. The date, time, location, nature of the operation, type of discharge; and the cause of the notice or order.
B. The water pollution control practices used before the discharge, or before receiving the notice or order.
C. The date of placement and type of additional or altered water pollution control practices placed after the discharge, or after receiving the notice or order.
D. A maintenance schedule for affected water pollution control practices.

ANNUAL CERTIFICATION - By June 15 of each year, the Contractor shall complete and submit to the Engineer an Annual Certification of Compliance, as contained in the Preparation Manual.

PAYMENT RETENTION

During each estimate period that the Contractor fails to conform to the provisions in this section, "Water Pollution Control," or fails to implement the water pollution control practices shown on the plans or specified elsewhere in these special provisions as items of work, the City will withhold 25 percent of the progress payment.

Withholds for failure to perform water pollution control work will be in addition to all other withholds provided for in the contract. The City will return performance failure withholds in the progress payment following the correction of noncompliance.

PAYMENT

The contract lump sum price paid “Water Pollution Control” for preparation and implementation of storm water pollution prevention plan shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved as specified in the Standard Specifications and these special provisions, as set forth in approved WPCP and as directed by the Engineer.

Payments for preparing and implementing storm water pollution prevention plan will be made as follows:

A. After the WPCP has been approved by the Engineer, 30 percent of the contract item price for water pollution control will be included in the monthly progress estimate.
B. Sixty percent of the contract item price for water pollution control will be paid over the life of the contract.
C. After acceptance of the contract in conformance with the provisions in Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, payment for the remaining 10 percent of the contract item price for water pollution control will be made in conformance with the provisions in Section 9-1.07A, "Payment Prior to Proposed Final Estimate."

No extra pavement will be provided for storm water sampling and analysis. No payment will be made for the preparation, collection, analysis, and reporting of storm water samples where appropriate water pollution control practices are not implemented before precipitation or if a failure of water pollution control practice is not corrected before precipitation.

Implementation of water pollution control practices in areas outside the right of way not specifically provided for in the WPCP or in these special provisions would not be paid for.

Water pollution control practices for which there are separate contract items of work will be measured and paid for as those contract items of work.

C-16
STREET SWEEPING

GENERAL

Summary

This work includes street sweeping.

The WPCP must describe and include the use of street sweeping as a water pollution control practice for sediment control and tracking control.

Submittals

At least 5 business days before starting clearing and grubbing, earthwork, or other activities with the potential for tracking sediment or debris, submit:

1. Number of sweepers described in the WPCP
2. Type of sweeper technology

Quality Control and Assurance

Retain and submit records of street sweeping including:

1. Quantity of sweeping waste disposal
2. Sweeping times and locations

CONSTRUCTION

Street Sweepers

Sweepers must use one of these technologies:

1. Mechanical sweeper followed by a vacuum-assisted sweeper
2. Vacuum-assisted dry (waterless) sweeper
3. Regenerative-air sweeper

Operation

Street sweeping must be done at:

1. Paved roads at job site entrance and exit locations
2. Paved areas within the job site that flow to storm drains or water bodies

Street sweeping must be done:

1. During clearing and grubbing activities
2. During earthwork activities
3. During trenching activities
4. During roadway structural section activities
5. When vehicles are entering and leaving the job site
6. After soil disturbing activities
7. After observing offsite tracking of material

The Contractor shall monitor paved areas and paved roads at jobsite access points. Street sweeping must be done:

1. Within 4 hour, if sediment or debris is observed during activities that require sweeping
2. Within 48 hours, if sediment or debris is observed during activities that do not require sweeping

At least 1 sweeper must be on the job site at all times when sweeping work is required. The sweeper must be in good working order.

Perform street sweeping to minimize dust. If dust generation is excessive or sediment pickup is ineffective, use water or a vacuum.

You may stockpile collected material on the jobsite according to the approved WPCP. Dispose of collected material at least once per week.

Material collected during street sweeping must be removed and disposed of under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

The Contractor must inspect paved roads at jobsite access points:

1. Daily if earthwork and other sediment or debris generating activities occur daily
2. Weekly if earthwork and other sediment or debris generating activities do not occur daily
3. When the National Weather Service predicts precipitation with a probability of at least 30 percent

PAYMENT

Full compensation for conforming to the provisions in this section, “Street Sweeping,” including furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in Street Sweeping including disposal of collected material, as specified in the Standard Specifications, these special provisions, and as directed by the Engineer, shall be considered as included in the contract prices paid for the water pollution control and no additional compensation will be allowed therefore.

SECTION C-17

Earthwork

C- .01 GENERAL
Earthwork shall conform to the applicable requirements of Section 19, "Earthwork", of the Standard Specifications, except as herein provided.

C- .02 COMPACTION TESTS
Arrangements for all required compation tests will be made by the Engineer. Compaction tests will be performed as specified in Section 19, "Earthwork", of the Standard Specifications under the direction of the Engineer. The contractor shall be liable for all expenses necessary to cover all tests which have failed to meet the requirements. Such expenses, as determined by the Engineer, shall be deducted from future payments due to the contractor. The contractor shall cooperate with the Engineer and shall furnish required labor and excavating equipment to aid in making compaction tests as determined by the Engineer.

C- .03 PAYMENT
The listed prices and payments shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in earthwork activities.

SECTION C-18

CURBS, CURB & GUTTERS, SIDEWALKS, DRIVEWAY APPROACHES, CROSS GUTTERS AND CURB RAMPS

GENERAL

This work includes constructing Portland Cement Concrete curbs, curb & gutters, sidewalks, driveway approaches, cross gutters, and curb ramps complete and in place as shown on the plans, as specified in these Special Provisions and shall conform to the provisions in Section 73, "Concrete Curbs and Sidewalks" and Section 90 “Portland Cement Concrete” of the Standard Specifications and these special provisions.

MATERIALS

Portland Cement Concrete

Portland Cement Concrete shall be Class 520-C-2500 with a maximum slump of four (4) inches and four percent air entrainment conforming to provisions in Section 201-1.1.2, “Concrete Specified by Class and Alternate Class” of SSPWC or as approved by the Engineer.

Prior to beginning the work, the Contractor shall submit to the Engineer, for review, and approval, preliminary concrete mix designs for each class and type of concrete specified for use by the Contractor. The mix designs shall be designed by an independent testing laboratory acceptable to the Engineer. All costs related to such mix design shall be borne by the Contractor.

Aggregate Base

Aggregate Base shall be Class 2 aggregate base conforming to provisions in Section 26-1.02A, “Class 2 aggregate Base” of Standard Specifications or as approve by the Engineer.

Curing Compound

The curing compound shall be curing compound (6) conforming to the provisions in Section 90-7.01B, "Curing Compound Method," of the Standard Specifications which is non-pigmented curing compound with fugitive dye conforming to the requirements in ASTM Designation: C 309, Type 1-D, Class A.

Prefabricated Curb ramp detectable warning surface

Prefabricated detectable warning surface shall be in conformance with the requirements established by the California Department of General Services, Division of State Architect. Prefabricated Curb ramp detectable warning surface must be:

1) Ocean blue color complying with Federal Standard 595B (Federal Color No. 15187);
2) Prefabricated;
3) Raised truncated domes;

The manufacturer must provide a written 5-year warranty for detectable warning surface, guaranteeing replacement when there is defect in the dome shape, color fastness, sound-on-cane acoustic quality, resilience, or attachment. The warranty period will begin upon acceptance of the contract.

Truncated dome material/color samples (6" x 6" minimum) and data sheets shall be submitted to the Engineer for review and approval before construction begins.

The cast-in-place or stamping the detectible warning surface will not be allowed.

CONSTRUCTION

No Portland Cement Concrete shall be ordered and/or poured until the forms and subgrade have been inspected and approved by the Engineer in the field.

Whenever standard curb and sidewalk are being constructed and the sidewalk is being placed contiguous to the standard curb, the curb and sidewalk shall not be poured monolithically.

All pull boxes, meter boxes and valve covers shall be adjusted to proposed finish grade by the Contractor prior to placement of the Portland Cement Concrete.

The surface of concrete shall not vary more than 0.02 feet from a ten-foot straight edge, except at grade changes and the finished surface shall be free from blemishes.

As soon as forms are removed, all exposed surfaces shall be carefully examined and any irregularities shall be immediately rubbed or ground in a satisfactory manner in order to secure a smooth, uniform, and continuous surface. Plastering or coating of surfaces to be smoothed will not be permitted. No repairs shall be made until after inspection by the Engineer. In no case will extensive patching of honeycombed concrete be permitted. Concrete containing minor voids, holes, honeycombing, or similar depression defects shall be repaired. Concrete containing extensive voids, holes, honeycombing, or similar depression defects, shall be completely removed and replaced. All repairs and replacements herein specified shall be promptly executed by the Contractor at its own expense.

The construction shall proceed at the maximum practical speed to replace sidewalks or other improvements, which obstruct vehicular or pedestrian traffic. In no case should the replacement exceed one week. The Contractor shall schedule his operations so that Portland Cement Concrete work shall be constructed within two (2) calendar days subsequent to removals at any given location unless indicated otherwise in other parts of these Special Provisions. If Portland Cement Concrete work is delayed, the Contractor shall backfill excavated areas as directed by the Engineer. Excavation operation shall not resume until concrete delivery to the site is resumed. No

removals will be allowed on Fridays without prior consent by the Engineer.

Curing Portland Cement Concrete

The concrete for curbs, curb & gutters, sidewalks, driveway approaches, cross gutters, and curb ramps shall be cured by the curing compound method. The curing compound shall be curing compound (6) conforming to the provisions in Section 90-7.01B, "Curing Compound Method," of the Standard Specifications.

The curing compound shall be applied in a manner that will provide a complete coating of all exposed faces of the concrete surface.

Portland Cement Concrete Curb

Portland cement concrete curb shall be constructed to the dimensions, lines, grades and details shown on the plans and shall comply with the construction methods set forth in the City of Victorville Standard Plan S-09, except where modified on the plans or herein.

Portland Cement Concrete Curb and Gutter

Portland cement concrete curb & gutter shall be constructed to the dimensions, lines, grades and details shown on the plans and shall comply with the construction methods set forth in the City of Victorville Standard Plan S-01, except where modified on the plans or herein.

Portland Cement Concrete Sidewalk

Portland cement concrete sidewalks shall be a minimum of four (4) inches thick and constructed to the dimensions, lines, grades and details shown on the plans and shall comply with the construction methods set forth in the City of Victorville Standard Plan S-04, except where modified on the plans or herein.

Portland Cement Concrete Driveway Approach

Portland cement concrete driveways approaches shall be a minimum of eight (8) inches thick for Commercial and a minimum of six (6) inches thick for Residential. Driveways approaches constructed to the dimensions, lines, grades and details shown on the plans and shall comply with the construction methods set forth in the City of Victorville Standard Plan S-02, S-02A, and S-03 as indicated on the plans except where modified on the plans or herein.

Portland Cement Concrete Cross Gutter

Portland cement concrete cross gutters shall be a minimum of eight (8) inches thick and constructed to the dimensions, lines, grades and details shown on the plans and shall comply with the construction methods set forth in the City of Victorville Standard Plan S-05, except where modified on the plans or herein.

Portland Cement Concrete Curb Ramp with Detectable Warning Surface

Portland cement concrete curb ramps shall be constructed to the dimensions, lines, grades and details shown on the plans and shall comply with the construction methods set forth in the City of Victorville Standard Plan S-11A, except where modified on the plans or herein.

No utility pull box, utility pole, traffic signal pull box, traffic signal pole foundation, or any other facility that is visible on or above the surface of a curb ramp may be located within the area of a curb ramp. For the purpose of this Section, the area of the curb ramp shall be the area including and bounded by the one-

foot (1') wide tactile strip on either side of the inclined portion of the ramp, the gutter section and the curb along the back of sidewalk.

The cast-in-place or stamping the detectible warning surface will not be allowed.

Installation of curb ramp detectable warning surface must comply with the manufacturer's recommendations. Panels shall be constructed with multiple integral embedment flanges to hold panel in concrete. Pin type embedment systems or adhesive attachment type shall not be used. Walking surface shall be non-slip.

The finished surfaces of the detectable warning surface shall be free from blemishes.

Protection of Improvement Against Damages

The contractor shall barricade and protect placed Portland Cement Concrete from all damage, marks, mars and/or graffiti. Any Portland Cement Concrete damaged, defaced, discolored or defective shall be replaced at the contractor's expense. The finished surface shall be free from humps, sags, blemishes or other irregularities.

Placing Portland Cement Concrete under Adverse Condition

Concrete shall not be placed on anything frozen or ice-coated, including but not limited to ground, sub-grade, base, forms, reinforcing steel, structural steel, conduits, pre-cast members or construction joints.

Concrete shall be maintained at a temperature of not less than 40-degrees Fahrenheit for 72 hours after placing. If the Contractor chooses to place concrete when there is a possibility of the ambient temperature falling below 40-degrees Fahrenheit, the Contractor shall submit a written outline of the proposed method for protecting the concrete for the Engineer's approval.

Under conditions of precipitation, placing of concrete shall be stopped before the quantity of surface water is sufficient to damage surface mortar or cause a flow or wash on the concrete surface, unless the Contractor provides adequate protection against damage.

Concrete that has been frozen, rained on or damaged by other causes, as determined by the Engineer, shall be removed and replaced by the Contractor at the Contractor's expense.

MEASUREMENT

Quantities of concrete curbs and curb & gutters to be paid for by linear foot will be determined by actual site measurement.

Quantities of concrete sidewalks, driveways and cross gutters to be paid for by square foot will be determined by actual site measurement.

Quantities of concrete cross gutters to be paid for by each will be paid as such per completion of plan to include curb and gutter portion.

Quantities of concrete curb ramps and gutter depressions to be paid for by each type and dimension will be determined by actual count at the site.

PAYMENT

The above prices and payments shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing portland cement concrete curbs, curb & gutter, sidewalks, drive approaches, cross gutters, gutter depressions and curb ramps of the forms and dimensions, complete in place, including excavation for base, excavation for the improvement, placing base material, compacting base material, subgrade preparation, as shown on the

plans and as specified in the Standard Specifications, these Special Provisions, the City of Victorville Standard Plans, and as directed by the Engineer.

Full compensation for constructing or furnishing and installing curb ramp detectable warning surfaces, ramps side slopes, grooves, expansion joints and retaining curbs shall be considered as included in the contract price paid per each unit for the various items of work requiring curb ramp detectable warning surfaces, ramps side slopes, grooves, expansion joints and retaining curbs and no separate payment will be made therefor.

Full compensation for furnishing and incorporating admixtures required by the Standard Specifications and these Special Provisions will be considered as included in the contract prices paid for the various items of work requiring concrete admixtures and no additional compensation will be allowed therefor.

SECTION C-19

CLASS 2 AGGREGATE BASE

This work shall consist of furnishing, spreading and compacting Class 2 aggregate base as conforming to Standard Specifications and these Special Provisions.

MATERIAL

Aggregate base shall be Class 2 and shall conform to the provisions in Section 26-1.02A, "Class 2 Aggregate Bases," of the Standard Specifications and these Special Provisions.

CONSTRUCTION

The Contractor shall not store reclaimed asphalt concrete or aggregate base with reclaimed asphalt concrete within 100 feet measured horizontally of any culvert, watercourse, or bridge.

Spreading of aggregate base shall conform to the provisions in Section 26-1.04 “Spreading,” of the Standard Specifications and these Special Provisions. Where the required thickness is 0.5-foot or less, the base material may be spread and compacted in one layer. Where the required thickness is more than 0.5-foot, the base material shall be spread and compacted in 2 or more layers of approximately equal thickness and the maximum compacted thickness of any 1 layer of aggregate base must not exceed 0.5-foot.

Compacting of aggregate base shall conform to the provisions in Section 26-1.05 “Compacting,” of the Standard Specifications and these Special Provisions.

The Contractor is responsible for maintaining the required moisture content until the next successive layer of material is placed. No additional compensation will be paid for water applied to the aggregate base after the material has been weighed.

The surface of the finished aggregate base at any point shall not vary more than 0.05-foot above or below the grade established by the Engineer.

MEASUREMENT

Quantities of aggregate base, to be paid for by the cubic yard, will be calculated on the basis of the dimensions shown on the plans adjusted by the amount of any approved change ordered by the Engineer. No allowance will be made for aggregate base placed outside those dimensions unless otherwise ordered by the Engineer.

PAYMENT

The unit prices paid per cubic yard for aggregate base shall include full compensation for furnishing all labor, materials materials (including water in the material at the time of weighing as provided in Section 26-1.06, "Measurement" of the Standard Specifications), tools, and equipment incidentals for doing all the work involved in constructing aggregate base, complete in place, as shown on the plans, and as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer. No additional payment will be allowed for additional material due to subgrade variation.

SECTION C-20
ROADWAY EXCAVATION

C- .01 GENERAL
Roadway excavation shall consist of all excavation involved in the grading and construction of the roadway, except structure excavation, ditch excavation, trenching, and any other excavation designated as paid for in another item.

C- .02 UNSUITABLE MATERIAL
Unsuitable material, as determined by the Engineer, encountered below the natural ground surface in embankment areas or below the grading plane in excavation areas shall be excavated and disposed of outside of the right-of-way.

The removal and disposal of such unsuitable material will be paid for as roadway excavation for the quantities involved if the removal of such material is shown on the Plans or specified in these Special Provisions.

If the removal of such unsuitable material is not shown on the Plans or specified in these Special Provisions, the removal and disposal of such unsuitable material will be paid for at the contract price for roadway excavation for the quantities involved unless either the Engineer, prior to removal of any such material, orders the unsuitable material to be removed and disposed of and paid for as extra work as provided in Section 4-1.03D, "Extra Work", of the Standard Specifications, or the contractor, prior to performing any such work, requests in writing that the removal and disposal of such unsuitable material be paid for as extra work as provided in Section 4-1.03D, "Extra Work", of the Standard Specifications.

C- .03 SURPLUS MATERIAL
Unless otherwise shown on the Plans or in these Special Provisions, no surplus excavated material may be disposed of within the right-of-way. The contractor shall make all arrangements for disposal of the material at off-site locations and shall, upon request, file with the Engineer the written consent of the owner of the property upon which it intends to dispose of such material.

Quantities of surplus material, if shown on the Plans or in these Special Provisions, are approximate only. The contractor shall satisfy itself that there is sufficient material available for the completion of the fills before disposing of any indicated surplus material inside or outside of the right-of-way. Any shortage of material, caused by premature disposal of the indicated surplus material by the contractor, shall be replaced by it and no compensation will be allowed for such replacement.

C- .04 MEASUREMENT
Measurement shall be in accordance with Section 19.2.08, "Measurement", of the Standard Specifications, unless designated as final pay quantities as defined in Section A-3.04, "Final Pay Quantities", of these Special Provisions.

C- .05 PAYMENT
Payment for all roadway excavation shall be made at the contract unit price per cubic yard. The contract unit price for roadway excavation shall include full compensation for excavating, sloping, rounding tops and ends of excavations, loading, disposing of surplus material, stockpiling, and hauling it to its final location.

SECTION C-22

CLEARING AND GRUBBING

Clearing and grubbing shall conform to the provisions in Section 16, "Clearing and Grubbing," of the Standard Specifications and these Special Provisions.

Unless otherwise provided on the plans, in these Special Provisions and/or as directed by the Engineer, all areas of construction shall be stripped of all vegetation and debris, and such material shall be removed from the site prior to performing any excavation or placing any fill.

Existing vegetation outside the areas to be cleared and grubbed shall be protected from injury or damage resulting from the Contractor's operations.

Activities controlled by the Contractor, except cleanup or other required work, shall be confined within the graded areas of the roadway.

Nothing herein shall be construed as relieving the Contractor of the Contractor's responsibility for final cleanup of the construction site as provided in Section 4-1.02, "Final Cleaning Up," of the Standard Specifications.

REMOVAL AND DISPOSAL OF MATERIALS

All materials removed shall be disposed of outside of the City's Right of Way, attention is directed to Section 7-1.13, "Disposal of Material Outside the Highway Right of Way." Burning is not permitted. No accumulation of flammable material shall remain on or adjacent to the right-of-way. The roadway and adjacent areas shall be left with a neat and finished appearance.

Bituminous Pavement

Bituminous pavement shall be removed to neatly sawed edge. Saw cuts shall be made to a minimum depth of 1 ½ inches. Where only the surface of existing bituminous pavement is to be removed, the method of removal shall be approved by the Engineer, and a minimum laying depth of 1 inch of new pavement material shall be provided at the join line. Where bituminous pavement adjoins a trench, the edges adjacent to the trench shall be sawed to neat straight lines before resurfacing to ensure that all areas to be resurfaced are accessible to the roller used to compact the subgrade or paving materials.

Concrete Pavement

Concrete pavement shall be removed to neatly sawed edges. Saw cuts shall be made to a minimum depth of 1 ½ inches. If a saw cut in concrete pavement falls within 3 feet of a construction joint, cold joint, expansion joint, or edge, the concrete shall be removed to the joint or edge. The edges of existing concrete pavement adjacent to trenches, where damaged subsequent to saw cutting of the pavement, shall again be saw cut to neat, straight lines for the purpose of removing the damaged pavement areas. Such saw cuts shall be either parallel to the original saw cuts or shall be cut on an angle which departs from the original saw cut not more than 1 inch in each 6 inches.

Concrete Sidewalks, Driveways, Curb & Gutters, and Cross Gutters

Concrete shall be removed to neatly sawed edges. Saw cuts shall be made to a minimum depth of 1 ½ inches. Concrete sidewalk or driveway to be removed shall be neatly sawed in straight lines either parallel to the curb or at right angle to the alignment of the sidewalk. No section shall be smaller than 30 inches in either length or width. If the saw cut in sidewalk or driveway falls within 30 inches of a

construction joint, expansion joint, or edge, the concrete shall be removed to the joint or edge, except that where the saw cut falls within 12 inches of a score mark, the saw cut shall be made in and along the score mark. Curb & gutter shall be sawed at right angle to the curb face. Cross gutter shall be sawed at right angle to the alignment of the gutter.

PAYMENT

The contract lump sum price paid for Clearing and Grubbing shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in clearing and grubbing as shown on the plans, and as specified in Standard Specifications and these Special Provisions, and as directed by the Engineer, including the removal and disposal of the resulting materials.

When the contract does not include a pay item for “Clearing and Grubbing” as above specified, and unless otherwise provided elsewhere in these Special Provisions, full compensation for any necessary clearing and grubbing required to perform the construction operations specified shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

SECTION C-23

HOT MIX ASPHALT

GENERAL

Work of This Section

This work includes producing and placing hot mix asphalt (HMA) Type B using the Standard process. Comply with Section 39, "Hot Mix Asphalt," of the Standard Specifications.

Standard Specifications

Except as otherwise indicated in this Section of the Special Provisions, the Contractor, for the Work in this section of Special Provisions, shall comply with the latest edition of the California Department of Transportation, Standard Specification together with any latest Supplement and Amendments (Standard Specifications).

Submittals

The Contractor shall submit for approval a “Job Mix Formula” for each class and grade of Hot Mix Asphalt required to construct the Work in accordance with Section 39-1.03 of the Standard Specifications.

The Contractor shall submit for approval a Quality Control Plan for each class and grade of Hot Mix Asphalt required to construct the Work in accordance with Section 39-1.03 of the Standard Specifications.

MATERIALS

Asphalt Binder

The grade of asphalt binder mixed with aggregate for Hot Mix Asphalt Type B must be PG 70-10.

Asphalt Aggregate

The aggregate for Hot Mix Asphalt Type B must comply with the 3/4-inch grading.

CONSTRUCTION

The asphalt concrete shall not be placed unless the atmospheric temperature is at least 150 F(10C) and rising or during unsuitable weather.

The asphalt concrete shall be evenly spread upon the subgrade or base to such a depth that, after rolling, it will be of the specified cross section and grade of the course being constructed.

The depositing, distribution and spreading of the asphalt concrete shall be accomplished in a single, continuous operation by means of self propelled mechanical spreading and finishing machine designed specifically for this for that purpose. The machine shall be equipped with a suitable full width compacting screed capable of being accurately regulated and adjusted to distribute a layer of the material to a definite predetermined thickness. When paving is of size or in a location that use of self-propelled machine is impractical the Engineer may waive the self propelled requirements.

Spreading, once commenced, must be continued without interruption. No greater amount of the mixture shall be delivered in any one day than can be properly distributed and rolled during that day.

ROLLING

Asphalt concrete shall be thoroughly compacted by rolling. The number if rollers used with each paving operation shall not be less than what is specified in the GreenBook Table 302-5.6.1 (A). each roller shall have a separate operator.

DENSITY AND SMOOTHNESS

Upon completion, the pavement shall be true to grade and cross section. When a 10 foot (3m) straightedge is laid on the finished surface parallel to the centerline of the roadway, the surface shall not vary from the edge of the straightedge more than 1/8 inch (3mm) except at intersection and grade changes. Any area not within this tolerance shall be brought to grade immediately following initial rolling. If the paving material in the area to be repaired shall be removed, by an approved method, to provide minimum laying depth of 1 inch (25mm), or two times the maximum size aggregate, which ever is greater, of the new pavement at the join line. Repairs shall not be made to pavement surface by feather-edging at join lines.

The compaction after rolling shall be 95 percent of the density obtained with the California Kneading Compactor per California Test 304.

The field density of compacted asphalt concrete shall be determined by:

a) A properly calibrated nuclear asphalt testing device in the field, or
b) California Test 308 when slabs or cores are taken for laboratory testing. Zinc stearate may be substituted for paraffin.

In case of dispute, method 2 shall be used.

Paved areas not to be subjected to vehicular traffic shall be compacted to 9 percent of California Test 304.

MANHOLES

Sewer and Storm Drain structures extending 2 inches or more above the new subgrade shall be removed by the contractor to the new subgrade before paving. Other structures shall be lowered by owners. Structures projecting less than 2 inches above the storm drain shall be paved over and adjusted to grade. All debris and foreign material shall be removed per 301-1.6. the top of reset manholes and other structures shall meet the smoothness requirements as specified in the Greenbook Section 302-5.6.2. All structures from which a manhole frames and covers have been removed to facilitate paving shall be temporary covered with a steel plate by the contractor.

MEASUREMENT

The contract item for Hot Mix Asphalt is measured by weight. The weight of each class and grade of Hot Mix Asphalt mixture designated in the Engineer's Quantity Estimate shall be the combined mixture weight.

If recorded batch weights are printed automatically, the contract item for Hot Mix Asphalt is measured by using the printed batch weights, provided:

1) Total aggregate and supplemental fine aggregate weight per batch is printed. If supplemental fine aggregate is weighted cumulatively with the aggregate, the total aggregate batch weight must include the supplemental fine aggregate weight.

2) Total asphalt binder weight per batch is printed.

3) Each truckload's zero tolerance weight is printed before weighing the first batch and after weighing the last batch.

4) Time, date, mix number, load number and truck identification is correlated with a load slip.

5) A copy of the recoded batch weights is certified by a licensed weight-master and submitted to the Engineer.

The contract item for placing HMA dike is measured by linear foot along the completed length. In addition to the quantities measured on a linear foot for HMA dike, the HMA is measured by weight.

PAYMENT

The contract prices paid per ton of Hot Mix Asphalt include full compensation for furnishing all labor, materials, equipment, and incidentals for doing all the work involve in constructing hot mix asphalt, complete in place, as shown on the plans, as specified in these Special Provisions, as specified in the Standard Specification and as directed by the Engineer.

Full compensation for the Quality Control Plan and Pre-paving conference is included in the contract prices paid per ton for hot mix asphalt and no additional compensation will be allowed therefore.

Full compensation for performing smoothness testing, submitting written and electronic copies of tests and performing corrective work including applying fog seal coat is included in the contract price paid per ton for the hot mix asphalt and no additional compensation will be allowed therefore.

Full compensation for spreading sand on RHMA-G surfaces and for sweeping and removing excess sand is included in the contract price paid per ton for rubberized hot mix asphalt and no additional compensation will be allowed therefore.

The contract prices paid per linear foot for Hot Mix Asphalt dike and per ton of Hot Mix Asphalt for HMA dike shall include full compensation for furnishing all labor, materials, equipment, and incidentals for doing all the work involved in placing hot mix asphalt dike, complete in place, including excavation, backfill, and preparation of the area to receive the dike, as shown on the plans, as specified in these Special Provisions, as specified in the Standard Specification and as directed by the Engineer.

The price of the asphalt shall contain the price of any markups and costs associated with performing the work at the various hours during the project which includes the construction of the roadway to be done at night. Also the contractor shall include sufficient lighting for construction and shall be in the various items of construction.

Unit prices for the asphalt shall include wage markups as well as plant and operating markups due to constructing at night. This should include all costs related directly to the performance of this item which includes any material plant start up fee and also no additional compensation will be allowed therefore.

SECTION C-24

ROADSIDE SIGNS

GENERAL

This work shall consist of furnishing and installing roadside signs in conformance with the Standard Specifications and these Special Provisions, and in conformance with the details shown on the plans or as directed by the Engineer.

MATERIAL

Sign posts shall be 10-ft 14 GA. Galvanized steel posts, Ulti-Mate Ez sign support system post, with holes drilled from top to bottom, 1-in on center. Anchor the pole to the ground using a 2-1/4”x2-1/4”x30”, 14 GA, Ulti-Mate penetrator anchor sleeve, with holes drilled 1-in on center. Post and penetrator anchors shall be produced from high strength steel according to ASTM A715, grade 60.

Roadside signs shall be furnished and installed at the locations shown on the plans or where designated by the Engineer and in conformance with the provisions in Section 56-2, "Roadside Signs," of the Standard Specifications and these special provisions.

The Contractor shall furnish roadside sign panels in conformance with the provisions in "Furnish Sign" of these special provisions.

Wood posts shall be pressure treated after fabrication in conformance with the provisions in Section 58, "Preservative Treatment of Lumber, Timber and Piling," of the Standard Specifications and AWPA Use Category System: UC4A, Commodity Specification A or B.Type N (CA), Type P (CA), and Type R (CA) marker panels mounted on a post with a roadside sign shall be considered to be sign panels and will not be paid for as markers.

FURNISH SIGN

Signs shall be fabricated and furnished in accordance with details shown on the plans, the Traffic Sign Specifications, and these special provisions.
Traffic Sign Specifications for California sign codes are available for review at:

http://www.dot.ca.gov/hq/traffops/signtech/signdel/specs.htm

Traffic Sign Specifications for signs referenced with Federal MUTCD sign codes can be found in Standard Highway Signs Book, administered by the Federal Highway Administration, which is available for review at:

http://mutcd.fhwa.dot.gov/ser-shs_millennium.htm

Information on cross-referencing California sign codes with the Federal MUTCD sign codes is available at:

http://www.dot.ca.gov/hq/traffops/signtech/signdel/specs.htm

Temporary or permanent signs shall be free from blemishes that may affect the serviceability and detract from the general sign color and appearance when viewing during daytime and nighttime from a distance of 25 feet. The face of each finished sign shall be uniform, flat, smooth, and free of defects, scratches, wrinkles, gel, hard spots, streaks, extrusion marks, and air bubbles. The front, back, and edges of the sign panels shall be free of router chatter marks, burns, sharp edges, loose rivets, delaminated skins, excessive adhesive over spray and aluminum marks.

QUALITY CONTROL FOR SIGNS

The requirements of "Quality Control for Signs" in this section shall not apply to construction area signs. No later than 14 days before sign fabrication, the Contractor shall submit a written copy of the quality control plan for signs to the Engineer for review. The Engineer will have 10 days to review the quality control plan. Sign fabrication shall not begin until the Engineer approves the Contractor's quality control plan in writing. The Contractor shall submit to the Engineer at least 3 copies of the approved quality control plan. The quality control plan shall include, but not be limited to the following requirements:

A. Identification of the party responsible for quality control of signs,
B. Basis of acceptance for incoming raw materials at the fabrication facility,
C. Type, method and frequency of quality control testing at the fabrication facility,
D. List (by manufacturer and product name) of process colors, protective overlay film, retroreflective sheeting and black non-reflective film,
E. Recommended cleaning procedure for each product, and
F. Method of packaging, transport and storage for signs.

No legend shall be installed at the project site. Legend shall include letters, numerals, tildes, bars, arrows, route shields, symbols, logos, borders, artwork, and miscellaneous characters. The style, font, size, and spacing of the legend shall conform to the Standard Alphabets published in the FHWA Standard Highway Signs Book. The legend shall be oriented in the same direction in accordance with the manufacturer's orientation marks found on the retroreflective sheeting.

On multiple panel signs, legend shall be placed across joints without affecting the size, shape, spacing, and appearance of the legend. Background and legend shall be wrapped around interior edges of formed panel signs as shown on plans to prevent delamination.

The following notation shall be placed on the lower right side of the back of each sign where the notation will not be blocked by the sign post or frame:

A. PROPERTY OF CITY OF VICTORVILLE,
B. Name of the sign manufacturer,
C. Month and year of fabrication,
D. Type of retroreflective sheeting, and
E. Manufacturer's identification and lot number of retroreflective sheeting.

The above notation shall be applied directly to the aluminum sign panels in 1/4-inch upper case letters and numerals by die-stamp and applied by similar method to the fiberglass reinforced plastic signs. Painting, screening, or engraving the notation will not be allowed. The notation shall be applied without damaging the finish of the sign.

Signs with a protective overlay film shall be marked with a dot of 3/8 inch in diameter. The dot placed on white border shall be black, while the dot placed on black border shall be white. The dot shall be placed on the lower border of the sign before application of the protective overlay film and shall not be placed over the legend and bolt holes. The application method and exact location of the dot shall be determined by the manufacturer of the signs.

For sign panels that have a minor dimension of 48 inches or less, no splice will be allowed in the retroreflective sheet except for the splice produced during the manufacturing of the retroreflective sheeting. For sign panels that have a minor dimension greater than 48 inches, only one horizontal splice will be allowed in the retroreflective sheeting.

Unless specified by the manufacturer of the retroreflective sheeting, splices in retroreflective sheeting shall overlap by a minimum of one inch. Splices shall not be placed within 2 inches from edges of the panels. Except at the horizontal borders, the splices shall overlap in the direction from top to bottom of

the sign to prevent moisture penetration. The retroreflective sheeting at the overlap shall not exhibit a color difference under the incident and reflected light.
Signs exhibiting a significant color difference between daytime and nighttime shall be replaced immediately.

Repairing sign panels will not be allowed except when approved by the Engineer.
The Department will inspect signs at the Contractor's facility and delivery location, and in accordance with Section 6, "Control of Materials," of the Standard Specifications. The Engineer will inspect signs for damage and defects before and after installation.

Regardless of kind, size, type, or whether delivered by the Contractor or by a common carrier, signs shall be protected by thorough wrapping, tarping, or other methods to ensure that signs are not damaged by weather conditions and during transit. Signs shall be dry during transit and shipped on palettes, in crates, or tier racks. Padding and protective materials shall be placed between signs as appropriate. Finished sign panels shall be transported and stored by method that protects the face of signs from damage. The Contractor shall replace wet, damaged, and defective signs.

Signs shall be stored in dry environment at all times. Signs shall not rest directly on the ground or become wet during storage. Signs, whether stored indoor or outdoor, shall be free standing. In areas of high heat and humidity signs shall be stored in enclosed climate-controlled trailers or containers. Signs shall be stored indoor if duration of the storage will exceed 30 days.

Screen processed signs shall be protected, transported and stored as recommended by the manufacturer of the retroreflective sheeting.

When requested, the Contractor shall provide the Engineer test samples of signs and materials used at various stages of production. Sign samples shall be 12" x 12" in size with applied background, letter or numeral, and border strip.

The Contractor shall assume the costs and responsibilities resulting from the use of patented materials, equipment, devices, and processes for the Contractor's work.

INSTALLATION

The contractor shall install the signs as called out on the signing and striping section of the plans. Each sign shall conform to the California State Department of Transportation charts and details. The installation of sign shall include the fabrication of the sign and also mounted to the pole and installed in the ground.

Removal and Replacement of a sign shall be considered as one item, unless it is noted specifically in the Bid Items List. The contractor shall remove the existing sign and pole and relocate the entire structure and reset according to the plans.

PAYMENT

The contract prices paid per installation, remove and replace and removal of traffic signs include full compensation for furnishing all labor, materials, equipment, and incidentals for doing all the work involve in constructing of traffic signs, complete in place, as shown on the plans, as specified in these Special Provisions, as specified in the Standard Specification and as directed by the Engineer.

SECTION C-25

TRAFFIC STRIPES AND PAVEMENT MARKINGS

This work shall consist of applying painted and thermo plastic traffic stripes and pavement markings at the locations and in conformance with details shown on the plans or designated by the Engineer, and as specified in the Standard Specifications and these Special Provisions.

For the purpose of this section, traffic stripes are defied as

1) Longitudinal stripes are defined as centerlines and lane lines which separate traffic lanes in the same or opposing direction of travel, and longitudinal edge lines which mark the edge of traveled way. Longitudinal stripes shall be Thermoplastic.

2) Transverse stripes are defined as limit lines (stop lines), crosswalk lines, shoulder markings, parking stall marking and railroad grade crossing markings. Transverse stripes shall be Thermoplastic.

3) Pavement markings are defined as symbol markings and word markings. Pavement markings shall be thermoplastic.

THERMOPLASTIC LONGITUDINAL TRAFFIC STRIPES AND PAVEMENT MARKINGS

This work shall consist of furnishing and applying thermoplastic longitudinal traffic stripes and pavement makings, including applying glass beads. Thermoplastic longitudinal traffic stripes (traffic lines) and pavement markings shall be applied in conformance with the provisions in Section 84, "Traffic Stripes and Pavement Markings," of the Standard Specifications and these Special Provisions.

Thermoplastic material shall be free of lead and chromium, and shall conform to the requirements in State Specification PTH-02ALKYD.

Retroreflectivity of the thermoplastic traffic stripes and pavement markings shall conform to the requirements in ASTM Designation: D 6359-99. White thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 250 mcd m^{-2} lx^{-1}. Yellow thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 150 mcd m^{-2} lx^{-1}.

Where striping joins existing striping, as shown on the plans, the Contractor shall begin and end the transition from the existing striping pattern into or from the new striping pattern a sufficient distance to ensure continuity of the striping pattern.

Thermoplastic material for traffic stripes shall be applied at a minimum rate of 0.34 lb/ft or minimum stripe thickness of 0.098 inch. The minimum application rate is based on a solid stripe of 4 inches in width.

Thermoplastic material for pavement markings shall be applied at a thickness of 0.150 inch.

Thermoplastic traffic stripes and pavement markings shall be free of runs, bubbles, craters, drag marks, stretch marks, and debris.

THERMOPLASTIC TRANSVERSE TRAFFIC STRIPES

This work shall consist of furnishing and applying thermoplastic transverse traffic stripes, including applying glass beads. Thermoplastic transverse traffic stripes (traffic lines) shall be applied in conformance with the provisions in Section 84, "Traffic Stripes and Pavement Markings," of the Standard Specifications and these Special Provisions.

Transverse traffic stripe thermoplastic shall conform to the requirements in State Specification No. PTWB-01.
The color of the thermoplastic traffic stripes and pavement markings shall conform to the requirements in ASTM Designation: D 6628-01.

Retroreflectivity of the thermoplastic traffic stripes and pavement markings shall conform to the requirements in ASTM Designation: D 6359-99. White thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 250 mcd m^{-2} lx^{-1}. Yellow thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 150 mcd m^{-2} lx^{-1}.

STRIPING AND PAVEMENT MARKINGS REMOVAL

Traffic stripes, pavement markings, and raised pavement markers (RPMs) shall be removed from the existing pavement as shown on the Plans or as directed by the Engineer.

Traffic stripes shall be removed before any change is made in the traffic pattern, and before painting new stripes, markings, and installing RPMs.

Traffic stripes and pavement markings shall be removed to the fullest extent possible from the pavement by wet sandblasting or any other method that does not materially damage the surface or texture of the pavement or surfacing as approved by the Engineer. Sand or other material deposited on the pavement or sidewalks as a result of removing traffic stripes and markings shall be removed as the work progresses. Accumulations of sand or other material, which might interfere with drainage or might constitute a hazard to traffic, will not be permitted.

Where blast cleaning is used for the removal of traffic stripes and pavement markings or for removal of objectionable material, and such removal operation is being performed within ten feet (10') of a lane occupied by public traffic, the residue including dust shall be removed immediately after contact between the sand and the surface being treated. Such removal shall be by a vacuum attachment operating concurrently with the blast cleaning operation.

Contractor will not be required to use a vacuum attachment under the following conditions:

1. When approved by the City Engineer

2. When the blasting sand will be confined by mechanical means to small area

3. When a sweeper (preferably a vacuum-type) will immediately follow the blasting operation or when traffic can be safely routed around the sand until it is swept up.

   Nothing in these Special Provisions shall relieve the contractor from his responsibilities as provided in Subsection 7-1.08, "Public Convenience) and 7-1.09 "Public Safety", of the Standard Specifications.

HOURS OF OPERATION

All work within Amethyst Rd. and Hook Blvd. shall be completed between the hours of 6:00 AM and 5:00 PM unless approved by the Engineer.

MEASUREMENT

Thermoplastic longitudinal traffic stripes and pavement markings will be measured as per foot.

Painted transverse traffic stripes will be measured as per foot.

PAYMENT

Per foot payment for thermoplastic longitudinal traffic stripes and pavement makings shall include full compensation for all labor, materials, tools, and equipment necessary for doing all the work involved in thermoplastic traffic stripes and pavement markings including establishing alignment for stripes and layout work, any necessary cat tracks, and dribble lines, complete in place as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer. No additional compensation will be allowed therefor.

Per foot payment for painted transverse traffic stripes shall include full compensation for all labor, materials, tools, and equipment necessary for doing all the work involved in painted transverse traffic stripes including any necessary cat tracks, dribble lines, and layout work, complete in place as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer. No additional compensation will be allowed therefor.

SECTION C-26

CONDUITS FOR FIBER OPTIC CABLES

The Contractor shall furnish and install conduits for fiber optic cables as specified and shown.

CONDUITS

The conduit installed by trenching or other approved method in straight runs. If bends are require during installation, they must sweeping bends. All such sweeping bends shall be approved by the Engineer before installation. Conduit shall have a minimum cover of 24 inches as measured from the finised grade at locations not under the roadway and 36 inches under the roadway. Coduit shall have a minimum separation of 12 inches of earth from any foreign substructures, or otherwise approved by the Engineer. Vault spacing shall be no more than 490 feet or as directed by the Engineer. Conduits shall meet the following requirements:

(a) All conduits shall be UL approved.

(b) 3-in diameter PVC schedule 40 or high density polyethylene (HDPE) conduits with pull cord where the conduits are not located under the roadway.

(c) 3-in diameter PVC schedule 80 or high density polyethylene (HDPE) conduits with pull cords where the conduits are located under the road way.

(d) One of the 3-in conduits shall be fitted with three 1-in diameter inner ducts with pull cords for fiber optic cables. The inner ducts shall be HDPE or equal materials and color coded as directed by the Engineer.

(e) Each of the 3-in conduits shall contain a #12 min copper ground wire that shall be continous between pull boxes. This conductor shall facilitate marking of underground conduit locations.

Conduit shall not extend more than 3 inches inside a vault. All coduit joints shall be sealed with the appropriate cement to ensure that two conduit pieces bond to one another to form a solid waterproof link. All conduit ends shall be sealed to minimze water ingress. If not already preinstalled by the manufacturer, a polyester tape with a minimum rated strength of 1250 pounds shall be installed in each conduit for future use. This tape shall have foot markes and be labeled every two feet. A solid #12 copper tracer wire shall be installed for locating the conduit.

All conduites shall be marked in the ground with a bright orange (preferably “ULCC” orange) or yellow warning tape at least 3 inches wide. The marking tape shall have integrated metallic mesh or cable to allow for easy detection. The marking tape shall be burried directly above the conduit run at a depth of approximately 12 inches bellow finish grade. The marking tape shall read “WARNING – OPTICAL CABLE” or other wording approved by the Engineer.

The conduit may be installed by either open trench, directional bore or trenching in pavement (rock saw) at the option of the Contractor. All utility pot hole, trench repair, concrete repair, asphalt repair in street, sidewalk, curb and gutter and otherwise due to activities required for installing the conduit for fiber optic conduit shall be the responsibility of the Contractor at no additional cost.

It shall be the responsibility of the Contractor to follow all legal requirements for underground utility locating.

PAYMENT

Full compensation for the required conduits for fiber optic cables shall include furnishing all labor, materials, tools, and equipment incidentals for doing all the work as herein provided. It shall include but not be limited to trenching or boreing, compaction, asphalt and concrete repair and replacement for conduit installation and pot hole requirements, All asphalt and concrete work associated with the installation of the fiber optic conduit shall be included in the per foot cost of the conduit.
Condiut for future Fiber Optic cable shall be paid as part of the lump sum for the Signal installtion. No additional compensation will be allowed.

SECTION C-27

FIRE HYDRANTS

C-27 Fire Hydrants

DESCRIPTION - This section includes the materials for and installation of fire hydrant assemblies.

REFERENCE STANDARDS - The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for.

AWWA C502 - Dry-Barrel Fire Hydrants

AWWA C550 - Protective Epoxy Interior Coatings for Valves and Hydrants

SYSTEM DESCRIPTION - Hydrant locations and orientation shall be as shown on the Approved Plans or as directed by the fire department of jurisdiction.

Hydrants shall generally have two 64mm (2 ½") outlets and one 100mm (4") outlet or as otherwise directed by the fire department of jurisdiction.

Fire hydrants shall be equipped with an anti-theft device in accordance with this section.

DELIVERY, STORAGE AND HANDLING - Fire hydrants shall be delivered and stored in accordance with AWWA C210, AWWA C213, and AWWA C550. The port openings shall be covered with plastic, cardboard or wood while in transit and during storage in the field. These covers shall remain in place until the valve is ready to be installed. Fire hydrants shall not be stored in contact with bare ground. Fire hydrants shall not be stacked.

TRACER WIRE - Tracer wire shall be installed in accordance with Section 15000 and the Standard Drawings.

WARNING/IDENTIFICATION TAPE - Warning/Identification tape shall be installed for fire hydrant assemblies in accordance with Section 15000.

MATERIALS

HYDRANTS - Fire hydrants and appurtenances shall be selected from the Approved Materials List.

Dry-barrel fire hydrants shall comply with AWWA C502 and these specifications unless otherwise indicated on the Approved Drawings.

The interior of ductile-iron hydrants shall be fusion-epoxy lined per AWWA C550.
All outlets shall be provided with National Standard Fire-Hose Threads. Outlets shall be equipped with brass or ductile iron caps with chains.

BOLTS AND NUTS - Hydrant flange bolts and nuts shall be selected from the Approved Materials List.

Wet barrel fire hydrants not equipped with break-off check valves shall be installed with break-away flange bolts selected from the Approved Materials List. The hollow shafts of break-away bolts shall be filled with silicone sealant. Bolts and nuts shall be zinc-plated A307 carbon steel in accordance with Section 15000.

ANTI-THEFT DEVICE - A bonnet-style anti-theft device shall be installed on each fire hydrant to prevent removal of the operating nut.

a) Device shall be secured to fire hydrant using tamper-proof bolts.

b) Device shall be painted to match fire hydrant body in accordance with Section 09910.

c) Device shall be selected from the Approved Material List.

CONCRETE - Concrete used for splash pads, thrust or anchor blocks shall be in accordance with Section 03000.

TRACER WIRE - Tracer wire shall be installed in accordance with Section 15000 and the Standard Drawings.

WARNING/IDENTIFICATION TAPE - Warning/Identification tape materials shall be in accordance with Section 15000 and the Approved Materials List.

FIELD PAINTING AND COATING - Field painting and coating materials shall be in accordance with Section 09910 in accordance with the Approved Materials List.

EXECUTION

GENERAL - Fire hydrant assemblies shall be installed at locations shown on the Approved Plans or as directed by the fire department of jurisdiction in accordance with

the Standard Drawings.

The location and port orientation of the Fire Hydrant shall be in accordance with the Standard Drawings.

Depending on location, fire hydrant assemblies may require protection posts or concrete retaining walls. When required by the City Engineer, or when shown on the Approved Plans, protection posts or retaining walls shall be installed in accordance with the Standard Drawings.

ANTI-THEFT DEVICE - Anti-theft device shall be installed in accordance with manufacturing recommendations.

CONCRETE - Concrete thrust and anchor blocks shall be installed in accordance with Section 03000 and the Standard Drawings. Refer to Section 03000 for the minimum concrete curing time required.

TRACER WIRE - Tracer wire shall be installed in accordance with Section 15000 and the Standard Drawings.

WARNING/IDENTIFICATION TAPE - Warning/Identification tape shall be installed in accordance with Section 15000 and the Standard Drawings.

DISINFECTION OF FIRE HYDRANT - The fire hydrant assembly shall be disinfected in accordance with Section 15041, as part of the process of disinfecting the main pipeline. The assembly valves shall be operated and the assembly flushed to completely disinfect all internal parts.

HYDROSTATIC TESTING - Fire hydrant assemblies shall be hydrostatically tested in accordance with Section 15044 in conjunction with the pipeline to which it is connected.

FIELD PAINTING AND COATING - The fire hydrant exterior shall be field painted in accordance with Section 09910.

PAYMENT - Full compensation for conforming to the above requirements will be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefore.

SECTION C-22

CLEARING AND GRUBBING

Clearing and grubbing shall conform to the provisions in Section 16, "Clearing and Grubbing," of the Standard Specifications and these Special Provisions.

Unless otherwise provided on the plans, in these Special Provisions and/or as directed by the Engineer, all areas of construction shall be stripped of all vegetation and debris, and such material shall be removed from the site prior to performing any excavation or placing any fill.

Existing vegetation outside the areas to be cleared and grubbed shall be protected from injury or damage resulting from the Contractor's operations.

Activities controlled by the Contractor, except cleanup or other required work, shall be confined within the graded areas of the roadway.

Nothing herein shall be construed as relieving the Contractor of the Contractor's responsibility for final cleanup of the construction site as provided in Section 4-1.02, "Final Cleaning Up," of the Standard Specifications.

REMOVAL AND DISPOSAL OF MATERIALS

All materials removed shall be disposed of outside of the City's Right of Way, attention is directed to Section 7-1.13, "Disposal of Material Outside the Highway Right of Way." Burning is not permitted. No accumulation of flammable material shall remain on or adjacent to the right-of-way. The roadway and adjacent areas shall be left with a neat and finished appearance.

Bituminous Pavement

Bituminous pavement shall be removed to neatly sawed edge. Saw cuts shall be made to a minimum depth of 1 ½ inches. Where only the surface of existing bituminous pavement is to be removed, the method of removal shall be approved by the Engineer, and a minimum laying depth of 1 inch of new pavement material shall be provided at the join line. Where bituminous pavement adjoins a trench, the edges adjacent to the trench shall be sawed to neat straight lines before resurfacing to ensure that all areas to be resurfaced are accessible to the roller used to compact the subgrade or paving materials.

Concrete Pavement

Concrete pavement shall be removed to neatly sawed edges. Saw cuts shall be made to a minimum depth of 1 ½ inches. If a saw cut in concrete pavement falls within 3 feet of a construction joint, cold joint, expansion joint, or edge, the concrete shall be removed to the joint or edge. The edges of existing concrete pavement adjacent to trenches, where damaged subsequent to saw cutting of the pavement, shall again be saw cut to neat, straight lines for the purpose of removing the damaged pavement areas. Such saw cuts shall be either parallel to the original saw cuts or shall be cut on an angle which departs from the original saw cut not more than 1 inch in each 6 inches.

Concrete Sidewalks, Driveways, Curb & Gutters, and Cross Gutters

Concrete shall be removed to neatly sawed edges. Saw cuts shall be made to a minimum depth of 1 ½ inches. Concrete sidewalk or driveway to be removed shall be neatly sawed in straight lines either parallel to the curb or at right angle to the alignment of the sidewalk. No section shall be smaller than 30 inches in either length or width. If the saw cut in sidewalk or driveway falls within 30 inches of a

construction joint, expansion joint, or edge, the concrete shall be removed to the joint or edge, except that where the saw cut falls within 12 inches of a score mark, the saw cut shall be made in and along the score mark. Curb & gutter shall be sawed at right angle to the curb face. Cross gutter shall be sawed at right angle to the alignment of the gutter.

PAYMENT

The contract lump sum price paid for Clearing and Grubbing shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in clearing and grubbing as shown on the plans, and as specified in Standard Specifications and these Special Provisions, and as directed by the Engineer, including the removal and disposal of the resulting materials.

When the contract does not include a pay item for “Clearing and Grubbing” as above specified, and unless otherwise provided elsewhere in these Special Provisions, full compensation for any necessary clearing and grubbing required to perform the construction operations specified shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

SECTION C-23

HOT MIX ASPHALT

GENERAL

Work of This Section

This work includes producing and placing hot mix asphalt (HMA) Type B using the Standard process. Comply with Section 39, "Hot Mix Asphalt," of the Standard Specifications.

Standard Specifications

Except as otherwise indicated in this Section of the Special Provisions, the Contractor, for the Work in this section of Special Provisions, shall comply with the latest edition of the California Department of Transportation, Standard Specification together with any latest Supplement and Amendments (Standard Specifications).

Submittals

The Contractor shall submit for approval a “Job Mix Formula” for each class and grade of Hot Mix Asphalt required to construct the Work in accordance with Section 39-1.03 of the Standard Specifications.

The Contractor shall submit for approval a Quality Control Plan for each class and grade of Hot Mix Asphalt required to construct the Work in accordance with Section 39-1.03 of the Standard Specifications.

MATERIALS

Asphalt Binder

The grade of asphalt binder mixed with aggregate for Hot Mix Asphalt Type B must be PG 70-10.

Asphalt Aggregate

The aggregate for Hot Mix Asphalt Type B must comply with the 3/4-inch grading.

CONSTRUCTION

The asphalt concrete shall not be placed unless the atmospheric temperature is at least 150 F(10C) and rising or during unsuitable weather.

The asphalt concrete shall be evenly spread upon the subgrade or base to such a depth that, after rolling, it will be of the specified cross section and grade of the course being constructed.

The depositing, distribution and spreading of the asphalt concrete shall be accomplished in a single, continuous operation by means of self propelled mechanical spreading and finishing machine designed specifically for this for that purpose. The machine shall be equipped with a suitable full width compacting screed capable of being accurately regulated and adjusted to distribute a layer of the material to a definite predetermined thickness. When paving is of size or in a location that use of self-propelled machine is impractical the Engineer may waive the self propelled requirements.

Spreading, once commenced, must be continued without interruption. No greater amount of the mixture shall be delivered in any one day than can be properly distributed and rolled during that day.

ROLLING

Asphalt concrete shall be thoroughly compacted by rolling. The number if rollers used with each paving operation shall not be less than what is specified in the GreenBook Table 302-5.6.1 (A). each roller shall have a separate operator.

DENSITY AND SMOOTHNESS

Upon completion, the pavement shall be true to grade and cross section. When a 10 foot (3m) straightedge is laid on the finished surface parallel to the centerline of the roadway, the surface shall not vary from the edge of the straightedge more than 1/8 inch (3mm) except at intersection and grade changes. Any area not within this tolerance shall be brought to grade immediately following initial rolling. If the paving material in the area to be repaired shall be removed, by an approved method, to provide minimum laying depth of 1 inch (25mm), or two times the maximum size aggregate, which ever is greater, of the new pavement at the join line. Repairs shall not be made to pavement surface by feather-edging at join lines.

The compaction after rolling shall be 95 percent of the density obtained with the California Kneading Compactor per California Test 304.

The field density of compacted asphalt concrete shall be determined by:

a) A properly calibrated nuclear asphalt testing device in the field, or
b) California Test 308 when slabs or cores are taken for laboratory testing. Zinc stearate may be substituted for paraffin.

In case of dispute, method 2 shall be used.

Paved areas not to be subjected to vehicular traffic shall be compacted to 9 percent of California Test 304.

MANHOLES

Sewer and Storm Drain structures extending 2 inches or more above the new subgrade shall be removed by the contractor to the new subgrade before paving. Other structures shall be lowered by owners. Structures projecting less than 2 inches above the storm drain shall be paved over and adjusted to grade. All debris and foreign material shall be removed per 301-1.6. the top of reset manholes and other structures shall meet the smoothness requirements as specified in the Greenbook Section 302-5.6.2. All structures from which a manhole frames and covers have been removed to facilitate paving shall be temporary covered with a steel plate by the contractor.

MEASUREMENT

The contract item for Hot Mix Asphalt is measured by weight. The weight of each class and grade of Hot Mix Asphalt mixture designated in the Engineer's Quantity Estimate shall be the combined mixture weight.

If recorded batch weights are printed automatically, the contract item for Hot Mix Asphalt is measured by using the printed batch weights, provided:

1) Total aggregate and supplemental fine aggregate weight per batch is printed. If supplemental fine aggregate is weighted cumulatively with the aggregate, the total aggregate batch weight must include the supplemental fine aggregate weight.

2) Total asphalt binder weight per batch is printed.

3) Each truckload's zero tolerance weight is printed before weighing the first batch and after weighing the last batch.

4) Time, date, mix number, load number and truck identification is correlated with a load slip.

5) A copy of the recoded batch weights is certified by a licensed weight-master and submitted to the Engineer.

The contract item for placing HMA dike is measured by linear foot along the completed length. In addition to the quantities measured on a linear foot for HMA dike, the HMA is measured by weight.

PAYMENT

The contract prices paid per ton of Hot Mix Asphalt include full compensation for furnishing all labor, materials, equipment, and incidentals for doing all the work involve in constructing hot mix asphalt, complete in place, as shown on the plans, as specified in these Special Provisions, as specified in the Standard Specification and as directed by the Engineer.

Full compensation for the Quality Control Plan and Pre-paving conference is included in the contract prices paid per ton for hot mix asphalt and no additional compensation will be allowed therefore.

Full compensation for performing smoothness testing, submitting written and electronic copies of tests and performing corrective work including applying fog seal coat is included in the contract price paid per ton for the hot mix asphalt and no additional compensation will be allowed therefore.

Full compensation for spreading sand on RHMA-G surfaces and for sweeping and removing excess sand is included in the contract price paid per ton for rubberized hot mix asphalt and no additional compensation will be allowed therefore.

The contract prices paid per linear foot for Hot Mix Asphalt dike and per ton of Hot Mix Asphalt for HMA dike shall include full compensation for furnishing all labor, materials, equipment, and incidentals for doing all the work involved in placing hot mix asphalt dike, complete in place, including excavation, backfill, and preparation of the area to receive the dike, as shown on the plans, as specified in these Special Provisions, as specified in the Standard Specification and as directed by the Engineer.

The price of the asphalt shall contain the price of any markups and costs associated with performing the work at the various hours during the project which includes the construction of the roadway to be done at night. Also the contractor shall include sufficient lighting for construction and shall be in the various items of construction.

Unit prices for the asphalt shall include wage markups as well as plant and operating markups due to constructing at night. This should include all costs related directly to the performance of this item which includes any material plant start up fee and also no additional compensation will be allowed therefore.

SECTION C-24

ROADSIDE SIGNS

GENERAL

This work shall consist of furnishing and installing roadside signs in conformance with the Standard Specifications and these Special Provisions, and in conformance with the details shown on the plans or as directed by the Engineer.

MATERIAL

Sign posts shall be 10-ft 14 GA. Galvanized steel posts, Ulti-Mate Ez sign support system post, with holes drilled from top to bottom, 1-in on center. Anchor the pole to the ground using a 2-1/4”x2-1/4”x30”, 14 GA, Ulti-Mate penetrator anchor sleeve, with holes drilled 1-in on center. Post and penetrator anchors shall be produced from high strength steel according to ASTM A715, grade 60.

Roadside signs shall be furnished and installed at the locations shown on the plans or where designated by the Engineer and in conformance with the provisions in Section 56-2, "Roadside Signs," of the Standard Specifications and these special provisions.

The Contractor shall furnish roadside sign panels in conformance with the provisions in "Furnish Sign" of these special provisions.

Wood posts shall be pressure treated after fabrication in conformance with the provisions in Section 58, "Preservative Treatment of Lumber, Timber and Piling," of the Standard Specifications and AWPA Use Category System: UC4A, Commodity Specification A or B.Type N (CA), Type P (CA), and Type R (CA) marker panels mounted on a post with a roadside sign shall be considered to be sign panels and will not be paid for as markers.

FURNISH SIGN

Signs shall be fabricated and furnished in accordance with details shown on the plans, the Traffic Sign Specifications, and these special provisions.
Traffic Sign Specifications for California sign codes are available for review at:

http://www.dot.ca.gov/hq/traffops/signtech/signdel/specs.htm

Traffic Sign Specifications for signs referenced with Federal MUTCD sign codes can be found in Standard Highway Signs Book, administered by the Federal Highway Administration, which is available for review at:

http://mutcd.fhwa.dot.gov/ser-shs_millennium.htm

Information on cross-referencing California sign codes with the Federal MUTCD sign codes is available at:

http://www.dot.ca.gov/hq/traffops/signtech/signdel/specs.htm

Temporary or permanent signs shall be free from blemishes that may affect the serviceability and detract from the general sign color and appearance when viewing during daytime and nighttime from a distance of 25 feet. The face of each finished sign shall be uniform, flat, smooth, and free of defects, scratches, wrinkles, gel, hard spots, streaks, extrusion marks, and air bubbles. The front, back, and edges of the sign panels shall be free of router chatter marks, burns, sharp edges, loose rivets, delaminated skins, excessive adhesive over spray and aluminum marks.

QUALITY CONTROL FOR SIGNS

The requirements of "Quality Control for Signs" in this section shall not apply to construction area signs. No later than 14 days before sign fabrication, the Contractor shall submit a written copy of the quality control plan for signs to the Engineer for review. The Engineer will have 10 days to review the quality control plan. Sign fabrication shall not begin until the Engineer approves the Contractor's quality control plan in writing. The Contractor shall submit to the Engineer at least 3 copies of the approved quality control plan. The quality control plan shall include, but not be limited to the following requirements:

A. Identification of the party responsible for quality control of signs,
B. Basis of acceptance for incoming raw materials at the fabrication facility,
C. Type, method and frequency of quality control testing at the fabrication facility,
D. List (by manufacturer and product name) of process colors, protective overlay film, retroreflective sheeting and black non-reflective film,
E. Recommended cleaning procedure for each product, and
F. Method of packaging, transport and storage for signs.

No legend shall be installed at the project site. Legend shall include letters, numerals, tildes, bars, arrows, route shields, symbols, logos, borders, artwork, and miscellaneous characters. The style, font, size, and spacing of the legend shall conform to the Standard Alphabets published in the FHWA Standard Highway Signs Book. The legend shall be oriented in the same direction in accordance with the manufacturer's orientation marks found on the retroreflective sheeting.

On multiple panel signs, legend shall be placed across joints without affecting the size, shape, spacing, and appearance of the legend. Background and legend shall be wrapped around interior edges of formed panel signs as shown on plans to prevent delamination.

The following notation shall be placed on the lower right side of the back of each sign where the notation will not be blocked by the sign post or frame:

A. PROPERTY OF CITY OF VICTORVILLE,
B. Name of the sign manufacturer,
C. Month and year of fabrication,
D. Type of retroreflective sheeting, and
E. Manufacturer's identification and lot number of retroreflective sheeting.

The above notation shall be applied directly to the aluminum sign panels in 1/4-inch upper case letters and numerals by die-stamp and applied by similar method to the fiberglass reinforced plastic signs. Painting, screening, or engraving the notation will not be allowed. The notation shall be applied without damaging the finish of the sign.

Signs with a protective overlay film shall be marked with a dot of 3/8 inch in diameter. The dot placed on white border shall be black, while the dot placed on black border shall be white. The dot shall be placed on the lower border of the sign before application of the protective overlay film and shall not be placed over the legend and bolt holes. The application method and exact location of the dot shall be determined by the manufacturer of the signs.

For sign panels that have a minor dimension of 48 inches or less, no splice will be allowed in the retroreflective sheet except for the splice produced during the manufacturing of the retroreflective sheeting. For sign panels that have a minor dimension greater than 48 inches, only one horizontal splice will be allowed in the retroreflective sheeting.

Unless specified by the manufacturer of the retroreflective sheeting, splices in retroreflective sheeting shall overlap by a minimum of one inch. Splices shall not be placed within 2 inches from edges of the panels. Except at the horizontal borders, the splices shall overlap in the direction from top to bottom of

the sign to prevent moisture penetration. The retroreflective sheeting at the overlap shall not exhibit a color difference under the incident and reflected light.
Signs exhibiting a significant color difference between daytime and nighttime shall be replaced immediately.

Repairing sign panels will not be allowed except when approved by the Engineer.
The Department will inspect signs at the Contractor's facility and delivery location, and in accordance with Section 6, "Control of Materials," of the Standard Specifications. The Engineer will inspect signs for damage and defects before and after installation.

Regardless of kind, size, type, or whether delivered by the Contractor or by a common carrier, signs shall be protected by thorough wrapping, tarping, or other methods to ensure that signs are not damaged by weather conditions and during transit. Signs shall be dry during transit and shipped on palettes, in crates, or tier racks. Padding and protective materials shall be placed between signs as appropriate. Finished sign panels shall be transported and stored by method that protects the face of signs from damage. The Contractor shall replace wet, damaged, and defective signs.

Signs shall be stored in dry environment at all times. Signs shall not rest directly on the ground or become wet during storage. Signs, whether stored indoor or outdoor, shall be free standing. In areas of high heat and humidity signs shall be stored in enclosed climate-controlled trailers or containers. Signs shall be stored indoor if duration of the storage will exceed 30 days.

Screen processed signs shall be protected, transported and stored as recommended by the manufacturer of the retroreflective sheeting.

When requested, the Contractor shall provide the Engineer test samples of signs and materials used at various stages of production. Sign samples shall be 12" x 12" in size with applied background, letter or numeral, and border strip.

The Contractor shall assume the costs and responsibilities resulting from the use of patented materials, equipment, devices, and processes for the Contractor's work.

INSTALLATION

The contractor shall install the signs as called out on the signing and striping section of the plans. Each sign shall conform to the California State Department of Transportation charts and details. The installation of sign shall include the fabrication of the sign and also mounted to the pole and installed in the ground.

Removal and Replacement of a sign shall be considered as one item, unless it is noted specifically in the Bid Items List. The contractor shall remove the existing sign and pole and relocate the entire structure and reset according to the plans.

PAYMENT

The contract prices paid per installation, remove and replace and removal of traffic signs include full compensation for furnishing all labor, materials, equipment, and incidentals for doing all the work involve in constructing of traffic signs, complete in place, as shown on the plans, as specified in these Special Provisions, as specified in the Standard Specification and as directed by the Engineer.

SECTION C-25

TRAFFIC STRIPES AND PAVEMENT MARKINGS

This work shall consist of applying painted and thermo plastic traffic stripes and pavement markings at the locations and in conformance with details shown on the plans or designated by the Engineer, and as specified in the Standard Specifications and these Special Provisions.

For the purpose of this section, traffic stripes are defied as

1) Longitudinal stripes are defined as centerlines and lane lines which separate traffic lanes in the same or opposing direction of travel, and longitudinal edge lines which mark the edge of traveled way. Longitudinal stripes shall be Thermoplastic.

2) Transverse stripes are defined as limit lines (stop lines), crosswalk lines, shoulder markings, parking stall marking and railroad grade crossing markings. Transverse stripes shall be Thermoplastic.

3) Pavement markings are defined as symbol markings and word markings. Pavement markings shall be thermoplastic.

THERMOPLASTIC LONGITUDINAL TRAFFIC STRIPES AND PAVEMENT MARKINGS

This work shall consist of furnishing and applying thermoplastic longitudinal traffic stripes and pavement makings, including applying glass beads. Thermoplastic longitudinal traffic stripes (traffic lines) and pavement markings shall be applied in conformance with the provisions in Section 84, "Traffic Stripes and Pavement Markings," of the Standard Specifications and these Special Provisions.

Thermoplastic material shall be free of lead and chromium, and shall conform to the requirements in State Specification PTH-02ALKYD.

Retroreflectivity of the thermoplastic traffic stripes and pavement markings shall conform to the requirements in ASTM Designation: D 6359-99. White thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 250 mcd m^{-2} lx^{-1}. Yellow thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 150 mcd m^{-2} lx^{-1}.

Where striping joins existing striping, as shown on the plans, the Contractor shall begin and end the transition from the existing striping pattern into or from the new striping pattern a sufficient distance to ensure continuity of the striping pattern.

Thermoplastic material for traffic stripes shall be applied at a minimum rate of 0.34 lb/ft or minimum stripe thickness of 0.098 inch. The minimum application rate is based on a solid stripe of 4 inches in width.

Thermoplastic material for pavement markings shall be applied at a thickness of 0.150 inch.

Thermoplastic traffic stripes and pavement markings shall be free of runs, bubbles, craters, drag marks, stretch marks, and debris.

THERMOPLASTIC TRANSVERSE TRAFFIC STRIPES

This work shall consist of furnishing and applying thermoplastic transverse traffic stripes, including applying glass beads. Thermoplastic transverse traffic stripes (traffic lines) shall be applied in conformance with the provisions in Section 84, "Traffic Stripes and Pavement Markings," of the Standard Specifications and these Special Provisions.

Transverse traffic stripe thermoplastic shall conform to the requirements in State Specification No. PTWB-01.
The color of the thermoplastic traffic stripes and pavement markings shall conform to the requirements in ASTM Designation: D 6628-01.

Retroreflectivity of the thermoplastic traffic stripes and pavement markings shall conform to the requirements in ASTM Designation: D 6359-99. White thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 250 mcd m^{-2} lx^{-1}. Yellow thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 150 mcd m^{-2} lx^{-1}.

STRIPING AND PAVEMENT MARKINGS REMOVAL

Traffic stripes, pavement markings, and raised pavement markers (RPMs) shall be removed from the existing pavement as shown on the Plans or as directed by the Engineer.

Traffic stripes shall be removed before any change is made in the traffic pattern, and before painting new stripes, markings, and installing RPMs.

Traffic stripes and pavement markings shall be removed to the fullest extent possible from the pavement by wet sandblasting or any other method that does not materially damage the surface or texture of the pavement or surfacing as approved by the Engineer. Sand or other material deposited on the pavement or sidewalks as a result of removing traffic stripes and markings shall be removed as the work progresses. Accumulations of sand or other material, which might interfere with drainage or might constitute a hazard to traffic, will not be permitted.

Where blast cleaning is used for the removal of traffic stripes and pavement markings or for removal of objectionable material, and such removal operation is being performed within ten feet (10') of a lane occupied by public traffic, the residue including dust shall be removed immediately after contact between the sand and the surface being treated. Such removal shall be by a vacuum attachment operating concurrently with the blast cleaning operation.

Contractor will not be required to use a vacuum attachment under the following conditions:

1. When approved by the City Engineer

2. When the blasting sand will be confined by mechanical means to small area

3. When a sweeper (preferably a vacuum-type) will immediately follow the blasting operation or when traffic can be safely routed around the sand until it is swept up.

   Nothing in these Special Provisions shall relieve the contractor from his responsibilities as provided in Subsection 7-1.08, "Public Convenience) and 7-1.09 "Public Safety", of the Standard Specifications.

HOURS OF OPERATION

All work within Amethyst Rd. and Hook Blvd. shall be completed between the hours of 6:00 AM and 5:00 PM unless approved by the Engineer.

MEASUREMENT

Thermoplastic longitudinal traffic stripes and pavement markings will be measured as per foot.

Painted transverse traffic stripes will be measured as per foot.

PAYMENT

Per foot payment for thermoplastic longitudinal traffic stripes and pavement makings shall include full compensation for all labor, materials, tools, and equipment necessary for doing all the work involved in thermoplastic traffic stripes and pavement markings including establishing alignment for stripes and layout work, any necessary cat tracks, and dribble lines, complete in place as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer. No additional compensation will be allowed therefor.

Per foot payment for painted transverse traffic stripes shall include full compensation for all labor, materials, tools, and equipment necessary for doing all the work involved in painted transverse traffic stripes including any necessary cat tracks, dribble lines, and layout work, complete in place as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer. No additional compensation will be allowed therefor.

SECTION C-26

CONDUITS FOR FIBER OPTIC CABLES

The Contractor shall furnish and install conduits for fiber optic cables as specified and shown.

CONDUITS

The conduit installed by trenching or other approved method in straight runs. If bends are require during installation, they must sweeping bends. All such sweeping bends shall be approved by the Engineer before installation. Conduit shall have a minimum cover of 24 inches as measured from the finised grade at locations not under the roadway and 36 inches under the roadway. Coduit shall have a minimum separation of 12 inches of earth from any foreign substructures, or otherwise approved by the Engineer. Vault spacing shall be no more than 490 feet or as directed by the Engineer. Conduits shall meet the following requirements:

(a) All conduits shall be UL approved.

(b) 3-in diameter PVC schedule 40 or high density polyethylene (HDPE) conduits with pull cord where the conduits are not located under the roadway.

(c) 3-in diameter PVC schedule 80 or high density polyethylene (HDPE) conduits with pull cords where the conduits are located under the road way.

(d) One of the 3-in conduits shall be fitted with three 1-in diameter inner ducts with pull cords for fiber optic cables. The inner ducts shall be HDPE or equal materials and color coded as directed by the Engineer.

(e) Each of the 3-in conduits shall contain a #12 min copper ground wire that shall be continous between pull boxes. This conductor shall facilitate marking of underground conduit locations.

Conduit shall not extend more than 3 inches inside a vault. All coduit joints shall be sealed with the appropriate cement to ensure that two conduit pieces bond to one another to form a solid waterproof link. All conduit ends shall be sealed to minimze water ingress. If not already preinstalled by the manufacturer, a polyester tape with a minimum rated strength of 1250 pounds shall be installed in each conduit for future use. This tape shall have foot markes and be labeled every two feet. A solid #12 copper tracer wire shall be installed for locating the conduit.

All conduites shall be marked in the ground with a bright orange (preferably “ULCC” orange) or yellow warning tape at least 3 inches wide. The marking tape shall have integrated metallic mesh or cable to allow for easy detection. The marking tape shall be burried directly above the conduit run at a depth of approximately 12 inches bellow finish grade. The marking tape shall read “WARNING – OPTICAL CABLE” or other wording approved by the Engineer.

The conduit may be installed by either open trench, directional bore or trenching in pavement (rock saw) at the option of the Contractor. All utility pot hole, trench repair, concrete repair, asphalt repair in street, sidewalk, curb and gutter and otherwise due to activities required for installing the conduit for fiber optic conduit shall be the responsibility of the Contractor at no additional cost.

It shall be the responsibility of the Contractor to follow all legal requirements for underground utility locating.

PAYMENT

Full compensation for the required conduits for fiber optic cables shall include furnishing all labor, materials, tools, and equipment incidentals for doing all the work as herein provided. It shall include but not be limited to trenching or boreing, compaction, asphalt and concrete repair and replacement for conduit installation and pot hole requirements, All asphalt and concrete work associated with the installation of the fiber optic conduit shall be included in the per foot cost of the conduit.
Condiut for future Fiber Optic cable shall be paid as part of the lump sum for the Signal installtion. No additional compensation will be allowed.

SECTION C-27

FIRE HYDRANTS

C-27 Fire Hydrants

DESCRIPTION - This section includes the materials for and installation of fire hydrant assemblies.

REFERENCE STANDARDS - The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for.

AWWA C502 - Dry-Barrel Fire Hydrants

AWWA C550 - Protective Epoxy Interior Coatings for Valves and Hydrants

SYSTEM DESCRIPTION - Hydrant locations and orientation shall be as shown on the Approved Plans or as directed by the fire department of jurisdiction.

Hydrants shall generally have two 64mm (2 ½") outlets and one 100mm (4") outlet or as otherwise directed by the fire department of jurisdiction.

Fire hydrants shall be equipped with an anti-theft device in accordance with this section.

DELIVERY, STORAGE AND HANDLING - Fire hydrants shall be delivered and stored in accordance with AWWA C210, AWWA C213, and AWWA C550. The port openings shall be covered with plastic, cardboard or wood while in transit and during storage in the field. These covers shall remain in place until the valve is ready to be installed. Fire hydrants shall not be stored in contact with bare ground. Fire hydrants shall not be stacked.

TRACER WIRE - Tracer wire shall be installed in accordance with Section 15000 and the Standard Drawings.

WARNING/IDENTIFICATION TAPE - Warning/Identification tape shall be installed for fire hydrant assemblies in accordance with Section 15000.

MATERIALS

HYDRANTS - Fire hydrants and appurtenances shall be selected from the Approved Materials List.

Dry-barrel fire hydrants shall comply with AWWA C502 and these specifications unless otherwise indicated on the Approved Drawings.

The interior of ductile-iron hydrants shall be fusion-epoxy lined per AWWA C550.
All outlets shall be provided with National Standard Fire-Hose Threads. Outlets shall be equipped with brass or ductile iron caps with chains.

BOLTS AND NUTS - Hydrant flange bolts and nuts shall be selected from the Approved Materials List.

Wet barrel fire hydrants not equipped with break-off check valves shall be installed with break-away flange bolts selected from the Approved Materials List. The hollow shafts of break-away bolts shall be filled with silicone sealant. Bolts and nuts shall be zinc-plated A307 carbon steel in accordance with Section 15000.

ANTI-THEFT DEVICE - A bonnet-style anti-theft device shall be installed on each fire hydrant to prevent removal of the operating nut.

a) Device shall be secured to fire hydrant using tamper-proof bolts.

b) Device shall be painted to match fire hydrant body in accordance with Section 09910.

c) Device shall be selected from the Approved Material List.

CONCRETE - Concrete used for splash pads, thrust or anchor blocks shall be in accordance with Section 03000.

TRACER WIRE - Tracer wire shall be installed in accordance with Section 15000 and the Standard Drawings.

WARNING/IDENTIFICATION TAPE - Warning/Identification tape materials shall be in accordance with Section 15000 and the Approved Materials List.

FIELD PAINTING AND COATING - Field painting and coating materials shall be in accordance with Section 09910 in accordance with the Approved Materials List.

EXECUTION

GENERAL - Fire hydrant assemblies shall be installed at locations shown on the Approved Plans or as directed by the fire department of jurisdiction in accordance with

the Standard Drawings.

The location and port orientation of the Fire Hydrant shall be in accordance with the Standard Drawings.

Depending on location, fire hydrant assemblies may require protection posts or concrete retaining walls. When required by the City Engineer, or when shown on the Approved Plans, protection posts or retaining walls shall be installed in accordance with the Standard Drawings.

ANTI-THEFT DEVICE - Anti-theft device shall be installed in accordance with manufacturing recommendations.

CONCRETE - Concrete thrust and anchor blocks shall be installed in accordance with Section 03000 and the Standard Drawings. Refer to Section 03000 for the minimum concrete curing time required.

TRACER WIRE - Tracer wire shall be installed in accordance with Section 15000 and the Standard Drawings.

WARNING/IDENTIFICATION TAPE - Warning/Identification tape shall be installed in accordance with Section 15000 and the Standard Drawings.

DISINFECTION OF FIRE HYDRANT - The fire hydrant assembly shall be disinfected in accordance with Section 15041, as part of the process of disinfecting the main pipeline. The assembly valves shall be operated and the assembly flushed to completely disinfect all internal parts.

HYDROSTATIC TESTING - Fire hydrant assemblies shall be hydrostatically tested in accordance with Section 15044 in conjunction with the pipeline to which it is connected.

FIELD PAINTING AND COATING - The fire hydrant exterior shall be field painted in accordance with Section 09910.

PAYMENT - Full compensation for conforming to the above requirements will be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefore.

SECTION C-21

CITY OF VICTORVILLE

SPECIAL PROVISIONS

FOR

TRAFFIC SIGNAL
CONTROLLER UNITS, CABINETS
AND
AUXILIARY EQUIPMENT

January 15, 2015

FOR USE IN CONJUNCTION WITH SECTION 86 OF THE CALIFORNIA STANDARD SPECIFICATIONS
Index

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1. SOLID STATE TRAFFIC ACTUATED CONTROLLER

General Description and Requirements

1.1.1 Traffic signal controllers, local masters and central computers shall include a standard communications protocol which meets or exceeds the requirements of AB3418 as specified by CALTRANS as well as the manufacturer's proprietary communications protocol. The equipment shall support both protocols simultaneously. No changes in hardware, firmware or software shall be required. The normal communications protocol shall be the default protocol enable on controller start up. The protocol shall include support for uploading system detector data using the optional message defined for that purpose. Contractor shall certify, in writing, that the controller software complies with this section.

1.1.2 This specification sets forth the minimum requirements for a shelf-mounted or rack mounted (to be specified) (16) sixteen-phase full-actuated solid state controller unit with internal Time-Based Coordination (TBC), railroad/fire (emergency vehicle) preemption, and closed loop secondary operation.

Hardware Design Requirements – NEMA Controller

1.2.1 The controller unit shall meet both the requirements of NEMA Standards Publications TS-2-1992 (TS 2), TS 3.4-1996 (TS-3.4), and TS 3.5-1996 (TS-3.5). TS-3.4 and TS-3.5 are also referred to as the National Transportation Communications for ITS protocol (NTCIP). In the event of conflict, difference, or discrepancy, these requirements shall govern. These specifications are applicable to either a TS 2 Type 1 interface or TS 2 Type 2 interface, as defined in the bid documents.

1.2.2 Each controller unit shall bear the manufacturer's name or logo, model number, date of manufacture and unique serial number permanently and neatly displayed on the front of the controller.

1.2.3 The controller unit shall be completely solid state and digitally timed. All user programmable functions may be entered via front panel keyboard entry, or remotely by use of interface software. Use of DIP or "pencil switches" within the controller is unacceptable. All timing shall be referenced to the 60 Hz power line operating frequency defined in TS-2 §2.1.3.

1.2.2.1 The overall physical dimensions of the controller unit shall not exceed 305 mm H, 440 mm W, 305 mm D.

1.2.2.2 Both TS 2 Type 1 and TS 2 Type 2 controllers shall be supplied with Port 1 SDLC and Port 2 RS-232 connections, as defined by TS 2 §3.3.1.1 and §3.3.2. Port 3 shall be capable of FSK modem communications with a DB9, 9-pin FSK connector, unless radio modem or fiber optic modem communications are specified in the plans. In that event, a DB9, 9 pin RS-232 or DB25, 25 pin RS 232, ST fiber, or RJ-11 standard data connectors shall be provided, as appropriate. The controller shall also be provided with a RJ45 port on the face and shall be Ethernet-enabled to allow communication across a TCP/IP network.

1.2.4 The controller unit design shall utilize one or more printed circuit boards (PCB's). All PCB's shall be silk-screened with component locations, the manufacturers name or logo, board part number, and revision level. All PCB's shall be designed to plug into or out of a motherboard or harness within the unit. The power supply, transformers, capacitors, and heat dissipating components are excepted from this requirement. The power supply shall be a linear style design.

1.2.5 The design shall allow for removal or replacement of PCB's without unplugging or removing other circuit boards.

1.2.6 The unit shall be designed so that one side of each PCB can be completely accessible for troubleshooting and testing the unit while it is still operating. This may be accomplished by aid of extender boards or cables. This requirement applies to only one circuit board at a time.

1.2.7 No more than two PCB's shall be attached to each other to constitute a circuit sub-assembly. Attaching hardware shall utilize captive nuts or a similar method to secure the boards together. The controller assembly shall be designed so that it can be tested and operated with the PCB's separated.

1.2.8 No circuit cuts shall be allowed on PCB's in any of the equipment supplied. Any wire jumpers included on circuit boards shall be placed in plated feed through holes that are specifically designed to contain them. Jumpers that are tack soldered to circuit traces, or are added to correct board layout errors, are unacceptable.

1.2.9 All IC's with 16 or more pins shall be mounted in machine tooled sockets. All sockets shall have two-piece, machined contacts and closed end construction to eliminate solder wicking. The outer sleeve shall be brass with tin or gold plating and tapered to allow easy IC insertion. The inner contact shall be gold finished, beryllium copper sub-plated nickel. All sockets shall have thermoplastic bodies meeting UL Specification 94V-0. Zero insertion force sockets will not be allowed.

1.2.10 Each of the following shall be simultaneously displayed during standard NEMA dual ring operation on the face of the unit:

1) Phase(s) in service (one per ring)
2) Phase(s) next to be serviced (one per ring)
3) Presence of vehicle call (one per phase)
4) Presence of pedestrian call (one per phase)
5) Recalls on vehicle phases (one per phase)
6) Reason for Green termination (one per ring)
(1) Gap-out
(2) Maximum time-out
(3) Force-off
7) Pedestrian service (one per ring)
8) Max II in effect (one per ring)

1.2.11 User programmed entries shall be stored and maintained in non-volatile memory. Battery power does not satisfy the requirements of this section.

1.2.12 The controller unit shall be designed to operate properly with the logic ground isolated from the AC neutral (common) power lead.

1.2.13 A high quality keyboard with a rated lifetime of 1×10^6 operations per key shall be provided on the front panel of the controller unit. The keyboard shall be used for programming all user-entered timings and settings.

1.2.14 A direct reading alphanumeric liquid crystal display with back lighting, minimum size of 40 characters by 4 lines, shall be provided on the front panel of the controller unit. The display shall be clearly readable in ambient light, internal cabinet light, full sunlight, or in absence of light from a distance of 1.0 meters at a 45° angle. The display shall have an automatic, user adjustable, time-out feature. The display shall remain clearly visible through the full TS-2 §2.1.5.1 operating temperature range of -34° C, to +74° C.

1.2.14.1 All I. C. chips shall be mounted in sockets. Dual-in-line (DIP) devices shall be mounted in military specification sockets, Augat part number 8xx-AG11D. All sockets shall have two-piece, machined contacts and closed end construction to eliminate solder wicking. The outer sleeve shall be brass with tin or gold plating and tapered to allow easy I.C. insertion. The inner contact shall be beryllium copper sub-plated with nickel and plated with gold. All sockets shall have thermoplastic bodies meeting UL Specification 94V-O. Each I.C. socket contact shall be plated with at least 50 microns of gold.

1.2.14.2 Controller software shall utilize flash prom memory storage technology to allow updates of software by uploaded and transferring the data via Port 1 or Port 2 on the front panel of the controller. New program updates shall not require the physical removal or exchange of any hardware items such as memory modules or integrated circuit chips, within the controller.

1.3 Time Clock

1.3.1 The clock shall use the sixty (60) Hz power line frequency as time base when AC power is present over the 89-135 VAC range defined by TS-2 §2.1.2. A super capacitor shall maintain the time-of-day clock and digital data during a power outage lasting up to 2 consecutive days. The use of batteries is unacceptable as means of compliance with this section.

1.3.2 The Time Base clock shall be maintained to within ± 0.005 % at 20° C and to within a ± 0.02 % over the full specified operating temperature range, as compared to Coordinated Universal Time (WWV) standard for a period of thirty days, during periods when AC power is not applied.

1.4 Clock/Calendar Programming Requirements

1.4.1 The clock shall be easily set to the year, month, day of month, day of week, hour, minute, and second.

1.4.2 Automatic Daylight Savings Time adjustment shall be a switchable keyboard menu option.

1.4.3 The dates for fixed and floating holidays and special events shall be keyboard user programmable.

1.4.4 Calendar adjustments for leap years shall be performed automatically by the controller.

1.4.5 The clock shall store sequences of operations in the form of 255 entries and 15 day plans.

Global Time Base Schedule					Actuated Traffic Signal Schedule
Entry	Months	Dates of Month	Days of Week	Day Plan	Time Base Actions
1	1-12	1-31	1-7	1-15	Entry 1 actions
:	"	"	"	"	:
255	"	"	"	"	Entry 255 actions

1.4.6 The structure and interrelationships of each type of program shall be in accordance with this section:

1.4.6.1 A day plan shall consist of the following:

Hour : Minute Action 1 (time to implement: action to implement)

: : :

Hour : Minute Action 10 (time to implement: action to implement)

Where each action is unique. There shall be a minimum of ten actions per day plan. There shall be a minimum of 15 day plans.

1.4.6.2 Each action in a day plan shall consist of a group of the following objects:

- pattern (consisting of):

cycle length
offset
split
MUTCD flash (on/off)g
free operation

- sequence
- special functions 1-8 (on/off)
- auxiliary
- functions 1-3 (on/off)
- mode of operation (a means of changing operating modes by T.O.D.)
- max II
- gap/ext II
- phase omits

Any or all of these may be selected within a single action.

Transfer into and out of FLASH shall be in accordance with the USDOT MUTCD. It shall possible to program each phase and overlap to flash either yellow or red via keyboard entry. This shall be accomplished by flashing the loadswitch driver outputs simultaneously.

1.4.6.3 An Entry shall consist of time period implemented: day plan, month(s), date(s) of month, and day(s) of week.

1.4.6.4 A minimum of 100 Entries shall be keyboard programmable.

1.4.6.5 A copy feature shall allow the transfer of entries between day plans.

1.5 Program Requirements

1.5.1 Programming

1.5.1.1 Programming of the controller unit shall be by the use of the keyboard and display on the front of the controller unit. Navigating various features shall require only simple keystrokes, aided by full menu displays.

1.5.1.2 The menu structure shall be well organized for ease of programming. It shall contain a main menu, which contains keyboard options for all sections of the controller on one screen. Each option shall be selectable by either a numeric entry or combination cursor positioning and ENTER key entry. Each subsequent menu shall be a detailed breakdown of one of the previous menu options. Each menu option shall be a descriptive name to prompt the user to the desired section for programming. All entries shall be displayed and entered in plain English. Toggle type entries shall be set by entering YES/NO or ON/OFF responses. Non-alphanumeric symbols and abbreviations will not be used to display information. For example, phase start up interval cannot be represented by a 0 = green, 1 = yellow, etc. All entries must state Red, Yellow, etc. in plain alpha symbols. Numeric entries shall be in the Base 10 (decimal) number system. Entries in other number bases, such as hexadecimal or binary, are not acceptable.

1.1.5.3 A user selectable minimum four digit access code shall be an available option for securing access to timing and configuration of the unit. Display features shall be made available without the need to password access the unit. The controller unit shall be supplied with the code factory preset to be all zeros (0000).

1.1.5.4 Instructions for use or entry of the access code shall not be printed on the face of the controller.

1.1.5.5 A keyboard entered coded command (a series of commands or entries, not a single entry) shall be provided which will set all controller and TBC timings and entries to a default or inactive value. This coded command shall allow new values to be entered without first deleting prior entries.

1.1.5.6 With the intersection display active, a keyboard command shall enable the user to place a call to each phase individually.

1.5.2Phase Operation

1.5.2.1 In NEMA or STD8 operating mode, the controller unit shall accommodate a minimum sixteen (16) phases and sixteen (16) overlaps. The overlaps shall be designated as A, B, C, D, E, F, G, H, I, J, K, M, N, O, P, and K. All overlaps shall be programmable through the keyboard and shall function as described by TS 2 §3.5.8.

1.5.2.2 Each of the TS-2 timing intervals shall be programmable for a minimum of eight phases at a time from the same display screen, in a spreadsheet format. The display may be scrolled or paged down to display the next eight phase bank, additional intervals, or related information.

1.5.2.3 The controller unit shall have a copy mode, allowing the user to easily copy programmed interval information into remaining phases.

1.5.2.4 In addition to TS 2 Section 3 requirements, the following modes shall be available on a per phase basis:

1) Conditional Re-service
2) Walk Clearance through Yellow
3) Skip Red Interval if no call in Yellow
4) Red Rest
5) Max II
6) Allow conflicting phases, 2 entries per phase
7) Next Phase if power up in the Yellow Interval

1.5.2.5 The following configurations, as a minimum, shall be programmed within the controller unit and be user selectable:

1) User Mode defined by the operator
2) 8 Phase NEMA
3) 8 Phase Sequential
4) NEMA phasing to the left of barrier, sequential phasing to the right of barrier (Quad Sequential).
5) 4 Phase Diamond Interchange
6) 3 Phase Diamond Interchange
7) Separate Intersection – (2) four-phase intersections

1.5.2.6 The controller shall have a configuration which allows a minimum of 4 user programmable rings (compatibility lines, reference points to assure there shall be no concurrent selection and timing of conflicting phases).

1.5.2.7 The controller shall have programmable conflicting phase settings where simultaneous operation of compatible phases is not allowed.

1.5.2.8 A Phase Dynamic Maximum operation which increments the current maximum in programmable steps (Dynamic Max Step) in seconds to a maximum limit (Dynamic Max Limit) in seconds shall be provided. The operation shall function as defined by TS 3.5 §2.2.2.18.

1.5.2.9 The TBC shall select and coordinate reversible left turn sequence operations (dual leading, leading and lagging, or lagging and leading left turns). It shall be possible to transfer operation from one sequence to another at a preprogrammed time. Transfer shall take place at T_0 during coordination (see paragraph 2.7.4.2).

1.5.3 Coordination

1.5.3.1 A minimum of 64 timing patterns, each with a unique cycle length and offset combination, shall be available. Each of the 64 timing patterns will select one of the 16 possible split plans. Cycle length selections are to be each changeable from 30 to 255 seconds, in one-second increments. Phase split times and offset selections are to be adjustable from 0 to 254, in 1-second increments.

1.5.3.2 The coordinator shall reference a system-wide reference cycle timer (system cycle timer). The term T_0 shall refer to the point in the local cycle timer when the first coordinated phase (or leading coordinated phase if a pair of coordinated phases was selected by the user) is scheduled on for the first time. Note, this may not be the beginning of Green in the case of early return. The offset shall be the time in seconds that the local cycle timer lags the system cycle timer. For example, if the offset is +10 seconds, T_0 (the point at which the local cycle timer is at 0) will occur when the system cycle timer is at 10 seconds.

1.5.3.3 An entry shall be provided that will allow the automatic modes of coordination to reference either the beginning of the coordinated phase to local cycle zero or reference the end of the coordinated phase to local cycle zero.

1.5.3.4 The controller shall contain the two modes of automatic coordination programming, fixed and floating force off modes, as required by TS-3.5 §2.5 / NTCIP entries. The following information shall be all that is required from the user to establish a pattern:

1) Basic NEMA controller timing
2) Cycle length in seconds
3) Desired phase sequence for the particular pattern
4) Total seconds of the cycle that a phase is to be active, including green, amber and red clearance times when there is constant demand on all input detectors
5) The coordinated phase or phases (from section 2.7.4.9 below).
6) The offset of the first coordinated phase serviced in the sequence from the reference clock's T_0 in seconds
7) Cycle length in seconds.

1.5.3.5 Using the above information in fixed force-off mode, the coordinator must perform the following functions for each pattern.

1) Guarantee the coordinated phase(s) programmed time will be serviced in their entirety to achieve coordination between intersections (when not correcting). The programmed time of the first coordinated phase in the phase sequence shall start at T_0.
2) Calculate each phase's force off point (the point at which a phase's Green must terminate, in order to not violate the following phases' programmed times).
3) Calculate the beginning of each phase's permissive window (the point in the cycle when the coord phase is allowed to yield to each corresponding phase).
4) Calculate the end of each phase's vehicle permissive window (the point proceeding a phase's force off point by its minimum time and the prior phase's clearance time). Any phase receiving a vehicle call before the end of vehicle permissive window will be serviced during the current cycle.
5) Calculate the end of each phase's pedestrian permissive window (the point preceding a phase's force off point by pedestrian Walk and pedestrian clearance times and the prior phase's clearance time). Any pedestrian call received by a phase before the end of pedestrian permissive window will be serviced during the current cycle up to the beginning of the phase vehicle green.
6) Guarantee that each phase's programmed time is serviced in full if a call was received before the beginning of permissive window, and the phase does not terminate due to Gap out.

1.5.3.6 Using the same information in floating force-off mode, the coordinator must operate in the same manner as fixed force-off mode, except that if a non-coordinated phase is entered early, it will remain active only for the time programmed in the split time. Automatically setting the max timer in each split to accomplish this function is acceptable.

1.5.3.7 Once the user-selectable data for phase service is entered, the controller unit shall test the plan to insure that the plan does not violate any minimum times based on the specified numbers and cycle length. If a faulty plan is detected, the controller unit shall show an error code indicating the problem. If the error is not corrected, the controller unit shall run in free operation mode whenever the erroneous plan is selected. If actuated pedestrian movements are programmed, the coordinator shall ignore errors detected due to the pedestrian Walk and clearance times violating the phase split time for any actuated pedestrian. The controller must have a diagnostic screen that lists any of the TS 3.5, §2.5.11 status reasons for free mode operation and must also have a diagnostic status screen. The diagnostic screen shall include all relevant information about the failure that resulted in free mode operation. As an example, if the cycle length does not equal to the sum of the splits, then the indication would be cycle failure and the sum of the splits would be displayed.

1.5.3.8 The coordinator shall be programmable to seek offsets by short-way (lengthening or shortening the cycle lengths). Shortening will have a 0 to 25% entry and lengthening will allow for a 0 to 50% entry. The controller will also contain a dwell method of coordination which will allow the controller to stop at local cycle zero until the offset entry is satisfied. A dwell time entry will also be available which will limit the amount of time the controller stops at local zero.

1.5.3.9 The controller unit coordination program shall be designed to be programmed from the front panel to emulate the operation of a pretimed controller by recall for applications where no vehicle detection is provided.

1.5.3.10 For each configuration, a coordinated phase must be selected from Ring 1. A coordinated phase must also be selected from other rings if a compatible phase with the Ring 1 coordinated phase exists. The coordinated phase, or phase pair, shall be selectable from one of the individual phases or phase pairs shown in this table:

CONFIGURATION				
Coordinated Phases (s)	8 Phase NEMA Dual ring and 3Φ diamond	Quad Sequential	8 Phase Sequential	4Φ Diamond
Individual	--	4 or 8	2, 4, 6, or 8	
Pairs	2 & 6 or 4 & 8	2 & 6	--	2 & 5, 4 & 5 1 & 6, or 1 & 8

If lead lag operation is selected, then during normal (8) phase operation only one phase needs to be selected as the coordinated phase. Compatible phase pairs shall not be forced to begin simultaneously.

1.5.3.10 When establishing its offset from the reference point for external coordination, the coordinator shall reference only the leading edge of the sync pulse, regardless of its width.

1.5.3.11 The internal coordination and upload/download programs shall not interfere with normal intersection operation except when changing ring structure in the controller or active phases. These operations (changing ring structure and active phases) shall require a confirmation and put the controller in a flash condition and a restart sequence. The implementation of revised timing parameters loaded into the timer shall be programmed to occur only at points in the controller coordination cycles which do not alter the controller phase sequence. The controller unit may temporarily drop out of synchronization during the upload/download, but must continue to operate.

1.5.3.12 Time-Based Coordinator (TBC)

1.5.3.12.1 The TBC shall allow the features and operations specified in 2.6.7.2 under time of day (T.O.D.) control.

1.5.3.12.2 The internal reference sync pulse, from which the local offset is calculated, shall resync at midnight, or the resync shall be user programmable with a default to midnight. A pulse shall be generated whenever the Time-of-Day Clock shows a time, which is an exact multiple of the current cycle length after this resynchronization. In case of a power failure, resync shall be calculated from the programmed resync time. The power failure recovery routine shall accommodate the case of a power failure at midnight.

1.5.3.12.3 An entry shall exist to change the reference by minutes from midnight.

1.6 Communications Ports

1.6.1 Each of the TS-2 specified ports shall have a selectable baud rate from 600 baud, to 57.6 kilobaud.

1.6.2 A RJ45 Ethernet port shall be provided on the face of the controller to enable connectivity between an Ethernet switch and the controller.

1.6.3 A USB port shall be provided.

1.7 Coordination Control Hierarchy

1.7.1 When the system switch is in the closed loop position, the controller unit shall be under the control of either the central computer, or an on-street master controller.

1.7.2 In the absence of any on-line Closed Loop System control by a central computer, or on-street master controller, the internal TBC shall control the coordinated, free, and flash operation of the intersection

1.7.3 When a master controller or central computer brings the intersection on-line, its control shall supersede that of the internal time base coordination.

1.7.4 When the system switch is in the FREE position, the controller unit shall operate in a non-coordinated (free) mode.

1.8 Preemption (PE)

1.8.1 The internal preemptor supplied shall be user programmable for priority preemption in the minimum sequences outlined in the following order: railroad (1 train sequence), emergency vehicle (4 high priority sequences), and bus/transit (4 low priority sequences). Each preemption sequence shall have separate timing intervals. A decoded input to the controller shall be provided to discriminate the priority level. A steady state low level input is defined as a high priority signal, and a pulsing low level input is defined as a low priority signal.

1.8.2 Phases shall be selectable such that a limited signal sequence may be operational during preempt (PE). It shall be possible to add phases to this special limited sequence, which are not in the intersection sequence, without needing to add external logic.

1.8.3 The following intervals shall be provided as a minimum. While in preemption, the display will clearly identify the intervals being timed as preempt intervals. Yellow and red clearances from the phase timings may be utilized in place of the clearance intervals shown.

1.8.4 Preemption Timing Interval Definition

All intervals are sequential.

0. **PE Delay** - This time shall start immediately when the preempt command is received. It shall not affect the normal operation of the controller unit until the delay time out occurs. This interval may be used for emergency vehicle (fire lane) preemption delay. If 0 (zero) time is set, the interval shall be omitted.
1. **PE Minimum Duration** - The preempt sequence shall not terminate until the preempt input signal is removed and the Minimum Duration time has expired.
2. **PE Minimum Green** - Any vehicle signal that is Green at the time this interval becomes active shall not terminate unless it has been displayed for at least the time programmed in this interval. If 0 (zero) time is set, the interval shall be omitted.
3. **PE Minimum Walk** - Preempt Minimum Walk Time in seconds. A preempt initiated transition shall not cause the termination of a Walk prior to its display for this period.
4. **PE Ped Clearance** - At the time of preempt call, WALK indications shall immediately change to Pedestrian Clearance interval. The Pedestrian Clearance interval shall not terminate unless it has been displayed for at least the time programmed in this interval. If 0 (zero) time is set, the interval shall be omitted.
5. **PE Track Green** - Signals programmed as track (or fire lane) signals shall remain Green or be changed to Green. All other signals shall be red. This interval shall be optionally programmable to zero during emergency vehicle PE.
6. **PE Dwell Green** - Minimum Dwell Time in seconds. This parameter controls the minimum timing for the dwell movement. The phase(s) allowed during the Dwell interval shall be selectable to include all phases that do not cross the track. The Dwell interval shall not terminate prior to the completion of Preempt Duration Time, Preempt Dwell Time, & the call is no longer present. Each signal shall be keyboard programmable for red, red flash, yellow flash or Green. As an alternative, a limited cycle shall be programmable for use with railroad preempts.
7. **PE Exit Ped Clear** - Preemption Exit Pedestrian Clear Time in seconds. This parameter controls the pedestrian clear timing for a Walk signal transition to the Exit Phase(s).
8. **PE Exit Yellow** - This interval shall provide a solid yellow clearance for indications that were green or flashing yellow. Red and flashing red displays shall display solid red.
9. **PE Exit Red Clearance** - This interval shall be an all red clearance in preparation for return to the normal cycle. Return phases shall be programmable from the keyboard.
10. **PE Max Call** - This interval is the amount of time that a preempt call may remain active and be considered valid. When the preempt call has been active for this amount of time, the controller shall return to normal operation. The preempt call shall be considered invalid until the call is no longer active.

1.8.5 Preempt Timing Interval Ranges

TIMING INTERVAL	TIME (Seconds)	INCREMENTS (Seconds)
0. PE Delay (Emergency vehicle preempt)	0-999	1
1. PE Minimum Duration	0-999	1
2. PE Minimum Green	0-255	1
3. PE Minimum Walk	0-255	1
4. PE Ped Clearance	0-255	1
5. PE Track Green	0-255	1
6. PE Dwell Green	1-255	1
7. PE Exit Ped Clear	0-255	1
8. PE Exit Yellow	3.0-25.5	0.1
9. PE Exit Red Clearance	0-25.5	0.1
10. PE Max Call	0-999	1

1.8.6 The phases to be serviced following the preempt sequence shall be front panel keyboard programmable.

1.8.7 Preempt sequences shall be selectable using external inputs. Preempt priority shall be assigned with #1 being the highest. If a higher priority preempt input is received during a preempt sequence, the controller unit shall immediately transition to the new sequence, subject to the constraints of PE Minimum Green and PE Minimum Walk. Provisions shall be made to clear two conflicting track phases from a single preempt input. This may be provided by two track clearance phases for a single preempt, or by combining two preempts.

1.8.8 Preempt 1 shall be reserved for a priority railroad preempt. If more than two preempts are provided, it shall be possible to delete the priority override for all but the railroad preempt. If a lower priority preempt is activated during another preempt cycle, the one in progress shall continue through its entire cycle. If the second preempt input is still active when the first one is completed, the controller unit shall then initiate the low priority preempt. When all preempt inputs are removed, the controller unit shall proceed through the normal sequence to Return Red Clearance (Interval 9).

1.8.9 Once the controller unit has entered the first timed interval following Preempt Delay (Interval 1), the sequence shall continue to the end even if the preempt call is dropped. If the call returns and extends beyond the Minimum Preempt Duration (Interval 1), the controller should reinitiate track green and complete the preempt sequence.

1.8.10 The controller unit shall be programmable to be in flash, or in limited sequence, during interval 6. If flash is specified, the phases shall flash yellow or red, as user programmed. Flash shall be implemented by simultaneously flashing the appropriate loadswitch driver outputs. If limited sequence is selected, all phases shall be programmable, even if not normally used in the intersection sequence.

1.8.11 Should a preempt command be present, after power restoration following an electrical outage, the controller shall power up in cabinet flash operation and remain in such state until the PE command is removed.

1.8.12 Overlap phases shall begin and terminate with the parent phases, as described in TS 2. If the PE call occurs during yellow or red displays between parent phases, the overlap phase shall display a minimum of 3 seconds of yellow and a minimum of 1 second of red clearance.

1.8.13 Don't Walk shall be displayed throughout the preempt sequence unless a limited cycle is run. During a limited cycle (Interval 6), the pedestrian heads may be programmed to be dark.

1.8.14 Preempt routines shall have priority over all controller functions.

1.8.15 The controller shall be programmable to allow multiple track clearance phases either within a single preemption sequence, or by mapping multiple preempts together in all modes of operation.

1.8.16 The controller will have an entry that allows it to coordinate during limited sequence operation. When operating in this mode, the controller will perform a soft transition to the preemption return phases.

1.9 Detection Control

1.9.1 The controller shall have provisions for up to 64 combination vehicle or bicycle actuated input channels, when utilizing data Bus Interface Units (BIUs) within a TS-2 Type I standard cabinet, or up to 32 actuated input channels, without utilizing BIU's, within a TS-1 standard cabinet. The controller shall allow user defined programmable mapping of the detector channels to reduce or eliminate the need to rewire a TS-1 standard cabinet in order to utilize all 32 detector channels.

1.9.2 All detection channels shall be capable of reporting volume and occupancy, at an interval of up to 99 minutes in one-second increments.

1.9.3 All detection channels shall be capable of reporting alarms based upon the following incidents, as prescribed by TS 3.5, chapter 2.3.
1) Maximum Presence, No Activity, Erratic Counts
2) When operating with BIUs: Open Loop, Shorted Loop, 25% Inductance Change, Watchdog Fault

1.9.4 All detection channels shall be individually assignable to any phase, or unassigned. Assignment arrangement shall not alter the ability of any channel to collect data or report alarms.

1.9.5 All detection channels shall have the following features, as defined by TS-3.5, chapter 2.3:
1) Call Phase Assignment
2) Switch Phase Assignment
3) Passage Detector Assignment
4) Queue Detector Operation
5) Delayed Detector Operation
6) Extended Detector Operation
7) Yellow Locking
8) Red Locking

1.9.6 All detection channels shall have the following enhanced features to govern both operation and data collection.
1) Delay Inhibit Phases
2) Occupancy on Green
3) Occupancy on Yellow

1.9.7 All features on all detection channels shall be capable of simultaneous operation. Features and their operation shall not be limited to a subset of detectors.

1.10 Closed Loop Operation and Monitoring Software (CLS)

1.10.1 Short haul FSK modems, necessary to operate the controller as a Closed Loop System secondary, shall be provided internal to the timer. All necessary cables and communication ports needed for operation in a Closed Loop System cabinet shall be provided. The modem equipment shall meet the same TS 2 environmental requirements as the controller.

1.10.2 The controller shall have internal software that allows the following functions and features.
1) Monitoring of signal indications, detectors, alarms, and time base functions
2) Controller database error checking
3) Coordination parameters
4) Remote resetting of coordination errors

5) Toggling special function outputs from the controller
6) Allow the central system to receive reports and alarms generated from the controller.
7) Accommodate connection of a dial-up modem to the controller to accomplish remote operation through the controller or the PC based software.

All capabilities from the controller keyboard shall be capable remotely through a computer interface through a communications modem connection.

1.10.3 The controller shall allow any of its detector inputs to be used with the system operation. The system shall report volume and occupancy counts based on a user-selectable time period for each detector. Storage of this data may take place at either the local or master controller, as specified within TS-3.4.

1.11 Traffic Surveillance Data Report

1.11.1 The Master controller shall have an integral traffic surveillance reporting capability as a standard feature. This surveillance capability shall be available independent from any system operation considerations. It shall be possible to obtain volume and occupancy data from all system detectors for a total of 16 sampling channels. 72 sampling periods shall be provided with a selectable duration from 1 to 255 min. (After 72 periods, as each new sampling period is recorded the oldest data shall be discarded). Surveillance data may be retrieved remotely, through a modem, to a central office computer.

1.11.2 The report generated shall provide the following data for each of the latest 72 sampling periods:

1. Time of sampling, including year, month, day, hour, minute.
2. Master program number and selection basis (TOD or TRAFFIC RESPONSIVE)
3. Intersection plan number, dial, split and offset in effect at the time of sample.
4. Coord status.
5. Flash status.
6. VOLUME and OCCUPANCY data from each of the 16 system detectors.

1.12 Compatability

The Master controller shall be fully compatible and provide direct interface with, and direct control of, intersection controllers furnished under these Special Provisions. This shall be accomplished without internal or external modification to the Master or the intersection controllers. All units shall be compatible and fully functioning with the existing City of Victorville Signal System.

1.13 Determination of Suitability

Any manufacturer of traffic signal control equipment or controller cabinets to be supplied under these Special Provisions shall provide a field and factory demonstration of the equipment proposed to be supplied. The demonstration shall be of equipment that has operated satisfactorily in accordance with specifications for a minimum of 180 calendar days subsequent to final acceptance by the jurisdiction to which it was supplied. This equipment shall have been performing those functions proposed under this contract. The demonstration shall be to two members of the City of Victorville Engineering Department designated by the City Traffic Engineer. The two person review team will determine the suitability of the equipment and their report shall be the final authority for determination of suitability of the proposed equipment. All expenses incurred in providing these demonstrations shall be the responsibility of the manufacturer of the proposed equipment. Naztec Model 980 ATC Traffic Controller with Ethernet & USB shall be acceptable or pre-approved equal.

1.14 After Sale Software and Firmware Changes and Updates

All software and firmware changes and updates applicable to equipment furnished under these Special Provisions shall be furnished for and/or installed in equipment at no cost to the City for a period of 24 calendar months from the date the equipment is placed in operation.

1.15 After Sale Service

In addition to all other warranties or guarantees which may be offered by the terms or conditions of these Special Provisions, the manufacturer of the equipment shall provide field service for correction of manufacturing defects or deficiencies at no cost to the City for a period of 24 calendar months from the date the equipment is placed in operation for all equipment furnished under these Special Provisions.

2. CABINET ENCLOSURE

2.1 The cabinet shall be fabricated from sheet aluminum, minimum thickness of 0.125 inches, type 5052-H32.

2.2 The dimensions shall be 75"H x 44 ½"W x 26"D, Type "R" cabinet.

2.3 All interior seams shall be continuously welded.

2.4 No vertical seams shall be allowed, except for the corners. The cabinet side walls and back shall be fabricated of one continuous piece of sheet aluminum.

2.5 The roof shall be fabricated of one continuous piece of sheet aluminum and shall incorporate a plenum to which the fans will be mounted from the inside of the cabinet to provide forced air ventilation. Continuous corner welds shall be allowed. The ventilation exhaust opening of the unit shall be underneath the front overhang and shall have a screen. The roof section shall be welded to the main cabinet body.

2.6 The cabinet interior and exterior shall have a factory applied corrosion resistant prime coat and baked enamel finish coat. Cabinet interior to be white. Cabinet exterior to be desert beige. Service or other cabinets furnished under this contract shall be the same color.

2.7 The cabinet shall be base mounted and have 4 mounting holes on the bottom of the unit. The mounting holes will be at 40-3/4" center to center in width, and 18-1/2" center to center in depth.

2.8 The main door of the cabinet shall include a police door. Both the main door and police door shall be supported by stainless steel hinges.

2.9 The main door shall be equipped with a three point latching mechanism, fabricated from heavy gauge steel with steel locking rods and twin nylon rollers. This mechanism is to be cadmium plated. The main door shall be provided with **two (2)** factory installed door stops to securely hold the door open at 90 degrees, 120 degrees and 180 degrees. The door stops shall be installed as to not interfere with access to the cabinet interior. The stops shall sustain function under 80 M.P.H. wind loading.

2.10 Included with the main door shall be a replaceable polypropylene mesh air filter, 12" x 16", which shall be located behind the louvered vents and secured with holding clips.

2.11 Door handle shall be made of 3/4" cold rolled round stock stainless steel and have a provision for padlocking.

2.12 Four shelves shall be included, and shall be of sufficient depth to store equipment.

2.13 Shelves shall be at least 10 ½ inches deep and be located in the cabinet to provide a ½ inch clearance between the back of the shelf and the back of the cabinet. A 1 ½ inch drawer shall be provided in the cabinet, mounted directly beneath the controller support shelf. This drawer shall have a hinged top cover and shall be capable of storing documents and miscellaneous equipment. This drawer shall support up to 50 pounds in weight when fully extended. Drawer shall open and close smoothly. Drawer dimensions shall make maximum use of the available width and depth offered by the cabinet and controller shelf.

2.14 All mounting hardware used in the cabinet, whether it is used to secure equipment or some portion of the cabinet itself shall be stainless steel or nickel plated brass.

2.15 The cabinet shall be supplied with a standard #2 lock for the main door and a standard police lock for the police door, two keys for each type lock are to be included.

2.16 The cabinet shall be wired to provide an event monitor signal to the controller whenever the cabinet door is opened.

2.17 The cabinet shall be wired to provide communication between Opticom discriminator cards and the controller.

2.18 The cabinet shall be wired to provide communication between the conflict monitor and the controller.

2.2 Loadbay

2.2.1 The loadbay shall be wired for full 8 phase operation, in an 8 phase quad configuration and shall accommodate a minimum of 14 loadswitch positions for the following:

8 Vehicular Phases
4 Pedestrian Phases
2 Overlaps

The loadbay shall also be wired for a 12 channel conflict monitor, which will be wired to monitor all yellow, green and walk intervals.

2.2.2 The loadbay shall also include the 3 NEMA connector harnesses as well as the 4th connector harness for coordination, preemption and special function I/0.

2.2.3 The loadbay shall incorporate a swing down design to facilitate ease of maintenance and repair. It shall also have service loops with sufficient slack to allow for the loadbay to swing down without any of the harnesses being unsecured.

2.2.4 The loadbay shall be located in front of the rear wall.

2.2.5 All terminal blocks shall be marked with a black on white letters or numbers. All terminal blocks mounted horizontally shall have vertical numbers or letters reading from left to right. All terminal blocks mounted vertically shall have vertical numbers or letters reading from top to bottom. Any terminal block having one or more of the buss removed shall be marked with an "A" and "B" side. On the horizontally mounted terminal blocks the "A" side shall be the upper set of screws and the "B" side the lower set of screws. The "A" - "B" letters shall be vertical and read from top to bottom. On the vertically mounted terminal blocks the "A" side shall be the left side and the "B" side the right side. The "A" - "B" letters shall be mounted over the terminal block mounting hole by two #8-32 screws in the tapped holes provided. Labeling shall also be provided within the controller cabinet to identify receptacles for relays and shelves supporting all removable control equipment, contactors, switches, fuses, circuit breakers, and all other equipment. Loadbay locations shall be labeled front and rear.

2.2.6 Flash relays will be wired de-energized during the normal operational mode of the intersection. The flash relays will become energized only on command of flash via manually or via the conflict monitor.

2.2.7 The loadbay shall have a conflict monitor interlock circuit which will allow the conflict monitor to be removed without the intersection going to flash, only while the main cabinet door is open. This feature is to be enabled via a door switch and a relay. This circuit will also allow the intersection to operate in a normal mode. In the event that the conflict monitor is accidentally not replaced, upon closure of the door this circuit will place the intersection in flash.

2.2.8 The loadbay shall be of such design that only the low voltage portions of the assembly may incorporate printed circuit board technology. All remaining high voltage and load carrying circuits shall be hard wired.

2.3 Police panel

2.3.1 The police panel shall include switches for the following:

Auto/Flash
Signals - On/Off

2.3.2 The Signals – On/Off switch shall be wired to kill power to the field wiring even when the cabinet in on UPS/Battery power.

2.3.3 The panel shall be located behind the police door on the main door of the cabinet. No wiring transmission to the switches shall be exposed.

2.3.4 The main power switch shall be a 50 amp circuit breaker.

2.4 Technician Test Panel

2.4.1 The technician test panel shall have switches for the following:
Flash/Automatic
Automatic/Stop Time
Controller Power - On/Off

2.5 Intersection Display Panel

2.5.1 An intersection display panel shall be mounted in the inside of the cabinet door. The display panel shall have minimum dimensions of 14" W X 9" H and labeled as in Appendix I.

2.5.2 The display indicators shall be placed in the display to reflect a typical eight-phase intersection. All symbols and legends indicated on the figure referenced in Appendix I shall be silk-screened onto the display panel.

2.5.3 The indicator lights shall be high brightness LED's of the appropriate color for the indication being represented. Vehicle detector LED's shall be yellow. The LED's shall have a minimum luminous intensity of 40 mcd @ 20 mA. The view angle of each LED shall exceed 35 degrees.

2.5.4 The intersection display panel shall have three position detection switches oriented with each vehicle and pedestrian phase indicator lights and for all preemption sequences. In the "up" position a constant call shall be placed. In the "center" position normal operation shall take place. In the "down" position a momentary call shall be placed.

2.5.5 There shall be a door switch that will turn on power to the display panel when the door is open. When the door is shut, the switch shall remove power to the indicators.

2.5.6 The display shall monitor the input side of the load switches. Interference circuitry between the load switch input and the display panel shall be designed for minimum loading of the load switch input pin.

2.5.7 The display shall be powered by a separate DC power supply. The display shall be sized for the voltage and current appropriate for the panel design but the supply voltage shall not exceed 28 V DC. The power supply shall be fused on the input and output sides.

2.5.8 Wiring to display panel shall be sheathed in nylon mesh sleeving.

2.6 Hardware

2.6.1 All hardware in this cabinet, whether it be for mounting or for termination shall be stainless steel or nickel plated brass.

2.6.2 All sheet metal products incorporated in this cabinet are to be aluminum, and shall be a minimum thickness of .090 inches, and are to be finished to prevent oxidation.

2.6.3 All termination points and assemblies are to be clearly marked and identified and shall correspond to the cabinet wiring print.

2.7 Wire Assemblies

All wire assemblies connecting one panel to another, and all harness shall be encased in a braided nylon sleeve. Cables are exempt from this requirement. Spiral wrap shall not be permitted.

2.8 Flasher

The flasher shall be NEMA, and shall be two circuit with indicator lights. The unit shall be rated for 15 amps per circuit, through the entire NEMA temperature range.

2.9 Loadswitches

2.9.1 The loadswitches shall be NEMA, and shall have indicator lights that show the input and output side of the relay. The unit shall be rated for 10 amps per circuit, through the entire NEMA temperature range.

2.9.2 All loadbays shall be furnished fully equipped with solid state loadswitches in each socket in accordance with the provisions in Section 86 of the Standard Specifications, and these Special Provisions.

2.10 Flash Transfer Relays

2.10.1 The flash transfer relays shall be Caltrans Type 430. Five each shall be supplied with each cabinet.

2.11 Vehicle Detector Rack

2.11.1 A fully wired detector rack shall be provided. It shall provide space for a minimum of twelve 2- or 4 channel vehicle detector amplifiers as well as space for two (2) Pre-empt discriminator cards. The detector rack shall be wired according to the rack diagram.

2.11.2 A separate cable shall be wired into the cabinet to provide detector inputs into the cabinet compatible with the *Iteris* Vantage plus Unit. Cable also known as an I.O.32/D37 Subminiature Cable.

2.11.3 A slot shall be provided for a BIU. It may be in the Vehicle detector rack or be mounted separately. It shall be configured and wired to accept a standard BIU communication device.

2.12 Fan and Thermostat Assembly

2.12.1 The fan and thermostat assemblies shall be located on the top inside of the cabinet, and shall be attached to the plenum.

2.12.2 The fans shall be rated at 100 CFM minimum and shall have ball bearings. Sleeve bearings are expressly forbidden.

2.12.3 The fans shall have screened covers.

2.12.4 The thermostats shall be 120 VAC and have a temperature rating of 70 to 120 degrees Fahrenheit.

2.12.5 An RC network shall be provided across the positive and negative inputs to the fans.

2.12.6 Two complete fan assemblies shall be furnished in each cabinet. Each fan shall be controlled by a separate thermostat.

2.13 Cabinet Lights

2.13.1 The cabinet interior illumination shall be Light emitting diode, and shall be UL approved.

2.13.2 The illumination shall be an equivalent of a minimum 15 watt output.

2.13.3 At least one fixture shall be mounted on the underside of the roof plenum towards the front, and shall be controlled by a door switch which is activated when the main cabinet door is opened.

2.14 Communications and Modem terminal blocks

2.14.1 All terminal blocks and connection cables to connect controller modem and/or dial-up modem to a telephone line and/or interconnect cable shall be furnished in each cabinet supplied under these Special Provisions.

2.15 Detection Camera Terminal Panel

2.15.1 A panel shall be installed to terminate all coax and power cables for the Video Detection cameras. Power terminations shall be individually fused or circuit breaker protected.

2.16 Documentation

2.16.1 All cabinet wiring shall be incorporated into one (1) schematic drawing. Multiple drawings shall not be allowed. Three of these drawings shall be provided with each cabinet. A reproducible original shall also be furnished.

2.16.2 Drawings shall indicate the intersection name, intersection phasing and detector assignments. The particular information regarding each intersection shall be given the successful bidder by the City.

2.16.3 Operational/repair manuals on each different piece of equipment shall be provided with each cabinet.

2.16.4 All drawings referred to above shall be furnished to the City on Compact Disk (CD) or Portable USB “Flash” memory device suitable for use on the City autocad system.

2.17 Determination of Suitability

Any manufacturer of traffic signal control equipment or controller cabinets to be supplied under these Special Provisions shall provide a field and factory demonstration of the equipment proposed to be supplied. The demonstration shall be of equipment that has operated satisfactorily in accordance with specifications for a minimum of 180 calendar days subsequent to final acceptance by the jurisdiction to which it was supplied. This equipment shall have been performing those functions proposed under this contract. The demonstration shall be to two members of the City of Victorville Engineering Department designated by the City Traffic Engineer. The two person review team will determine the suitability of the equipment and their report shall be the final authority for determination of suitability of the proposed equipment. All expenses incurred in providing these demonstrations shall be the responsibility of the manufacturer of the proposed equipment.

2.18 Delivery

Notification shall be made to the City of Victorville Engineering Department Traffic Signal Maintenance Division (Juan Robinson) 24 hours before delivery, Office (760) 955-5209 or Cell (760) 559-3391.
All cabinets shall be delivered to:
City of Victorville
14177 McArt Rd
Victorville CA 92392
Attention: Juan Robinson

3 VIDEO DETECTION SYSTEM

3.1. General

This specification sets forth the minimum requirements for a system that detects vehicles on a roadway using only video images of vehicle traffic.

3.1.1 System Hardware

The video detection system (VDS) shall consist of four or six video cameras, four or more video detection processors (VDP) which mount in a standard detector rack; one or more detector rack mounted extension modules (EM),a Communications I/O interface module, a single point interface Ethernet Device, display monitor, surge suppressor for each video input, and a pointing device.

3.1.2 System Software

The system shall include software that detects vehicles in multiple lanes using only the video image. Detection zones shall be defined using only an on board video menu and a pointing device to place the zones on a video image. Up to 24 detection zones per camera shall be available. A separate computer shall not be required to program the detection zones.

3.2 Functional Capabilities

3.2.1 Available System Configuration

3.2.1.1 The VDS will be deployed at locations where site conditions and roadway geometry vary. The VDS system may also be deployed at locations where existing cabinets or equipment exist. Existing site configurations will dictate the availability of cabinet space and VDS usage.

3.2.1.2 The proposed VDS shall be available in various configurations to allow maximum deployment flexibility. Each configuration shall have identical user interface for system setup and configuration. The communications protocol to each configuration shall be identical and shall be hardware platform independent. The proposed VDS shall have multiple configurations available for deployment.

3.2.1.3 An option to have wireless video transmission between the camera sensor and VDP shall also be available from the VDS manufacturer.

3.2.1.4 Wired camera systems shall be able to transmit NTSC or PAL video signals, with minimal degradation, up to 1000 feet under ideal conditions.

3.2.1.5 Wireless camera systems shall be able to transmit an NTSC video signal, with minimal signal degradation, up to 500 feet under normal conditions and up to 900 feet under ideal electromagnetic interference conditions. Adjacent sources of electromagnetic radiation, or the absence of a direct line of sight between transmitter and receiver antennas, may result in video signal degradation.

3.2.1.6 The VDP shall process video from one to four sources depending upon the VDP module used. The source can be a video camera, DVD or video tape player. The video shall be input to the VDP in NTSC or PAL composite video format and shall be digitized and analyzed in real time. VDP's shall process images from all video inputs simultaneously.

3.2.1.7 The VDP shall detect the presence of vehicles in up to 24 detection zones per camera. A detection zone shall be approximately the width and length of one car.

3.2.1.8 Detection zones shall be programmed via an on-board menu displayed on a video monitor and a pointing device connected to the VDP. The menu shall facilitate placement of detection zones and setting of zone parameters or to view system parameters. A separate computer shall not be required for programming detection zones or to view system operation.

3.2.1.9 The VDP shall store up to three different detection zone patterns. The VDP can switch to any one of the three different detection patterns within 1 second of user request via menu selection with the pointing device. Each configuration shall be uniquely labeled for identification and the currently active configuration indicator shall be displayed on the monitor.

3.2.1.10 The VDP shall detect vehicles in real time as they travel across each detector zone.

3.2.1.11 The VDP shall have an EIA232 port for communications with an external computer. The VDP EIA232 port shall be multi-drop compatible.

3.2.1.12 The VDP shall accept new detector patterns from an external computer through the EIA232 port when the external computer uses the correct communications protocol for downloading detector patterns. A Windows™-based software designed for local or remote connection and providing video capture, real-time detection indication and detection zone modification capability shall be provided with the system.

3.2.1.13 The VDP shall send its detection patterns to an external computer through the EIA232 port when requested when the external computer uses the appropriate communications protocol for uploading detector patterns.

3.2.1.14 The extension module (EM) shall be available to avoid the need of rewiring the detector rack, by enabling the user to plug an extension module into the appropriate slot in the detector rack. The extension module shall be connected to the VDP by an 8-wire cable with modular connectors. VDP and EM communications shall be accommodated by methods using differential signals to reject electrically coupled noise. The extension module shall be available in both 2 and 4 channel configurations. EM configurations shall be programmable from the VDP. A separate I/O module with 32 outputs – 8 inputs using external wire harness for expanded flexibility shall also be provided.

3.2.1.15 The camera system shall be able to transmit the composite video signal, with minimal signal degradation, up to 1000 feet under ideal conditions.

3.2.1.16 The associated VDP shall default to a safe condition, such as a constant call on each active detection channel, in the event of loss of video signal.

3.2.1.17 The system shall be capable of automatically detecting low-visibility conditions such as fog and respond by placing all defined detection zones in a constant call mode. A user-selected output shall be active during the low-visibility condition that can be used to modify the controller operation if connected to the appropriate controller input modifier(s). The system shall automatically revert to normal detection mode when the low-visibility condition no longer exists.

3.3 Vehicle Detection

3.3.1 Up to 24 detection zones per camera input shall be supported and each detection zone can be sized to suit the site and the desired vehicle detection region.

3.3.2 The VDP shall provide up to 24 output channels of vehicle presence detection per camera through a standard detector rack edge connector and one or more extension modules.

3.3.3 A single detection zone shall be able to replace multiple inductive loops and the detection zones shall be OR'ed as the default or may be AND'ed together to indicate vehicle presence on a single phase of traffic movement.

3.3.4 Placement of detection zones shall be done by using only a pointing device, and a graphical interface built into the VDP and displayed on a video monitor, to draw the detection zones on the video image from each video camera. No separate computer shall be required to program

the detection zones.

3.3.5 Detection zone outputs shall be configurable to allow the selection of presence, pulse, extend, and delay outputs. Timing parameters of pulse, extend, and delay outputs shall be user definable between 0.1 to 25.0 seconds.

3.3.6 Up to six detection zones shall be capable to count the number of vehicles detected. The count value shall be internally stored for later retrieval through the EIA232 port. The zone shall also have the capability to calculate and store average speed and lane occupancy at bin intervals of 10 seconds, 20 seconds, 1 minute, 5 minutes, 15 minutes, 30 minutes and 60 minutes.

3.3.7 When a vehicle is detected within a detection zone, the corners of the detection zone shall activate on the video overlay display to confirm the detection of the vehicle.

3.3.8 Detection zone setup shall not require site specific information such as latitude and longitude to be entered into the system.

3.3.9 A minimum of 3 detection zone patterns shall be saved within the VDP memory. The VDP's memory shall be non-volatile to prevent data loss during power outages. The VDP shall continue to operate (e.g. detect vehicles) using the existing zone configurations even when the operator is defining/modifying a zone pattern. The new zone configuration shall not go into effect until the configuration is saved by the operator.

3.3.10 The selection of the detection zone pattern for current use shall be done through a local menu selection or remote computer via EIA232 port. It shall be possible to activate a detection zone pattern from VDP memory and have that detection zone pattern displayed within 1 second of activation.

3.3.11 The VDP system shall have the capability to automatically switch to any one of the stored configurations based on the time of day which shall be programmable by the user.

3.3.12 The VDP shall provide dynamic zone reconfiguration (DZR) to enable normal detector operation of existing channels except the one where a zone is being added or modified during the setup process. The VDP shall output a constant call on any detection channel corresponding to a zone being modified.

3.3.13 Detection shall be at least 98% accurate in good weather conditions and at least 96% accurate under adverse weather conditions (rain, snow, or fog). Detection accuracy is dependent upon site geometry; camera placement, camera quality and detection zone location, and these accuracy levels do not include allowances for occlusion or poor video due to camera location or quality.

3.3.14 The VDP shall output a constant call for each enabled detector output channel if a loss of video signal occurs. The VDP shall also output a constant call during the background learning period.

3.4 VDP and EM Hardware

3.4.1 The VDP and extension module (EM) shall be specifically designed to mount in a standard detector rack, using the edge connector to obtain power and provide contact closure outputs. No adapters shall be required to mount the VDP or EM in a standard detector rack. Detector rack rewiring shall not be required.

The EM shall be available to avoid the need of rewiring the detector rack, by enabling the user to plug an extension module into the appropriate slot in the detector rack. The extension module shall be connected to the VDP by a 8 wire cable with modular connectors, and shall output contact closures in accordance with user selectable channel assignments. The EM is available in 2, 4, or 24 channel configurations.

3.4.2 The VDP and EM shall operate in a temperature range from -34°C to +74°C and a humidity range from 0%RH to 95%RH, non-condensing.

3.4.3 The VDP and EM shall be powered by 12 or 24 volts DC. These modules shall automatically compensate for the different input voltages.

3.4.4 VDP power consumption shall not exceed 300 milliamps at 24 VDC. The EM power consumption shall not exceed 120 milliamps at 24 VDC.

3.4.5 The VDP shall include an EIA232 port for serial communications with a remote computer. The VDP EIA232 port shall be multi-drop compatible. This port shall be a 9-pin "D" subminiature connector on the front of the VDP.

3.4.6 The VDP shall utilize flash memory technology to enable the loading of modified or enhanced software through the EIA232 port without modifying the VDP hardware.

3.4.7 The VDP and EM shall include detector output pin-out compatibility with industry standard detector racks.

3.4.8 The front of the VDP shall include detection indications, such as LED's, for each channel of detection that display detector outputs in real time when the system is operational.

3.4.9 The front of the single and dual VDPs shall include one or two BNC video input connectors suitable for RS170 video inputs as required. For four channel VDPs, an adapter cable that converts a DB15 interface to 4 individual BNC connectors shall be used. The video input shall include a switch selectable 75-ohm or high impedance termination to allow camera video to be routed to other devices, as well as input to the VDP for vehicle detection. RCA type connectors/jacks for video input are not allowed. Video shall not be routed via the edge connectors of the processor.

3.4.10 The front of the VDP shall include one BNC video output providing real time video output that can be routed to other devices. A RCA type connector/jack for video output is not allowed.

3.4.11 The front panel of the VDP and EM shall have a detector test switch to allow the user to place calls on each channel. The test switch shall be able to place either a constant call or a momentary call depending on the position of the switch.

3.5 Rack Mounted Video Detection Single Point Interface Ethernet Device With MPEG4/H.264 Video Streaming

3.5.1. General

This specification sets forth the minimum requirements for a module that provides a single point interface to multiple rack-mounted video detection units. This module shall also have the capability to stream up to 4 simultaneous video streams over an Ethernet interface.

3.5. 2. Functional Capabilities

3.5.2.1 The interface device shall provide capabilities to enable multiple rack-mounted video detection processors to be locally and remotely accessed from a single point via one set of user interface devices. User interface devices are defined as a pointing device (mouse or track-ball) and video monitor.

3.5.2.2 Up to four video detection processor chains (video detection processor and extension modules) shall be accommodated.

3.5.2.3 The device shall allow the operator to switch video output display for any of the attached rack-mounted video detection processors by pressing a momentary switch or by using the remote access software.

3.5.2.4 Local user access to video detection programming shall be limited to the detection processor unit that is currently being displayed on the monitor.

3.5.2.5 All local programming and setup parameters for the video detection processor shall be user accessible through the interface unit without requiring the user to swap user interface cables between video detection processors.

3.5.2.6 Remote access to the device shall be through the built-in Ethernet port or EIA-232 port via access software running on a Microsoft Windows based personal computer.

3.5.2.7 An internet browser-based remote access firmware shall also be available for remote setup and diagnostics.

3.5.2.8 The interface unit shall support streaming video technology using MPEG4 and H.264 standards to allow the user to monitor video detection imagery over the Ethernet interface. Motion JPEG streaming video shall not be allowed.

3.5.2.9 The user shall be able to select which video input to be displayed on the output video monitor by repeatedly depressing the menu button.

3.5.2.10 The user shall be able to select a quad view of all of the four cameras simultaneously on the output video monitor by depressing the menu button.

3.5.2.11 The interface unit shall allow four independent streams, one from each video detection processor, to be transported via Ethernet to four independent streaming video players simultaneously in CIF resolution.

3.5.2.12 The interface unit shall also have a browser interface that allows the user to configure the module.

3.5.2.13 The browser interface shall also allow the user to view the streaming video on the browser interface.

3.5.2.14 The browser interface shall allow the user to select the resolution of the displayed streamed video.

3.5.2.15 The interface unit shall support the streaming and display of D1, CIF, QCIF, VGA and QVGA video resolutions in a single stream or four concurrent streams in CIF resolution.

3.5.2.16 The interface unit shall allow the user to select a quad-view of all four input video signals to be shown on the browser interface.

3.5.2.17 The interface unit shall allow the user to manage the unit's Ethernet bandwidth usage by allowing the user to select the maximum bandwidth limit between 256 kbps and 7.0 Mbps.

3.5.2.18 The browser interface shall allow the user to change the unit's Ethernet network settings of IP address, subnet mask and default gateway.

3.5.2.19 The interface unit shall allow the user to upload new application firmware through the use of the browser interface.

3.5.2.20 Access to the interface unit shall be under password control and the browser interface shall allow the user to change the password.

3.5.2.21 The interface unit shall have the capability to perform IP port redirecting between the remote management software and each attached video detection processor. A unique IP port number shall be assigned for each video detection interface. The port number shall not be identical to the web browser interface of 80.

3.5.3. Interface Device Hardware

3.5.3.1 The interface device shall be specifically designed to mount in a standard TS-1, TS-2, and 170 type detector rack, using the edge connector to obtain power. No adapters shall be required to mount the interface device in a standard detector rack.

3.5.3.2 The interface device shall occupy no more than two slots in the detector rack and shall provide a loop-type handle for easy installation and removal.

3.5.3.3 The interface device shall be powered by 12 or 24 volts DC and shall not consume more than 6.25 watts. The unit shall automatically compensate for the different input voltages and shall be hot-swappable.

3.5.3.4 The interface device shall operate in a temperature range from -35°C to +74°C and a humidity range from 0% RH to 95% RH, non-condensing.

3.5.3.5 Video Ports - The interface unit shall accommodate a maximum of four composite video inputs and one video output.

3.5.3.5.1 Video inputs and video output shall be made via BNC connectors to ensure secure connections. RCA or other straight friction plug-in type connections shall not be allowed. Video inputs shall use a vendor supplied “octopus” cable to accommodate the four video inputs. Provisions shall be made to accommodate the mating cable to utilize jack screws for securing the octopus cable.

3.5.3.5.2 The interface unit shall accommodate either monochrome or color video signals conforming to NTSC or PAL video standards.

3.5.3.5.3 The interface unit shall automatically sense the video input signal and configure the video output port to either NTSC or PAL standards. Each video input signal shall be separately sensed to allow mixed video signals.

3.5.6 The interface unit shall interface with up to four video detection processors using RJ-45 interface connectors.

3.5.7 The interface unit shall support the use of USB pointing devices. The unit shall support either a USB mouse or trackball. Pointing devices shall not require vendor specific pointing device software drivers.

3.5.8 An EIA-232 communications port shall be provided for local and remote access. The connector for this port shall be a 9-pin “D” subminiature connector on the front of the interface unit. Provisions shall be made to accommodate mating cables to utilize jack screws for securing cables.

3.5.9 Hi-intensity LED status lights shall be provided to facilitate system monitoring. Indicators shall be provided to show the status of the internal processor, video lock and indication of which video input is being monitored.

3.5.10 An Ethernet port shall be integrated within the interface unit. The Ethernet port shall conform to 802.3 Ethernet specifications and shall auto-sense between 10 and 100 Mbps data rates. Industry standard TCP/IP (UDP and TCP packets) protocol shall be supported. The Ethernet connection shall be made through a RJ-45 connector.

3.5.4 Limited Warranty

3.5.4.1 The supplier shall provide a limited three-year warranty on the video detection system. See suppliers standard warranty included in the Terms and Conditions of Sale documentation.

3.5.4.2 During the warranty period, technical support shall be available from the supplier via telephone within 4 hours of the time a call is made by a user, and this support shall be available from

factory-certified personnel or factory-certified installers.

3.5.5 Maintenance and Support

3.5.5.1 The supplier shall maintain an adequate inventory of parts to support maintenance and repair of the system. These parts shall be available for delivery within 30 days of placement of an acceptable order at the supplier's then current pricing and terms of sale for said parts.

3.5.5.2 The supplier shall maintain an ongoing program of technical support for the interface unit and video detection system. This technical support shall be available via telephone, or via personnel sent to the installation site upon placement of an acceptable order at the supplier's then current pricing and terms of sale for on site technical support services.

3.5.5.3 Installation or training support shall be provided by a factory authorized representative.

3.5.5.4 All product documentation shall be written in the English language.

3.6. Camera

3.6.1 The video cameras used for traffic detection shall be furnished by the VDP supplier and shall be qualified by the supplier to ensure proper system operation.

3.6.2 The camera shall produce a useable video image of the bodies of vehicles under all roadway lighting conditions, regardless of time of day. The minimum range of scene luminance over which the camera shall produce a useable video image shall be the minimum range from nighttime to daytime, but not less than the range 0.1 lux to 10,000 lux.

3.6.3 The camera shall be digital signal processor (DSP) based and shall use a sensing element and shall output color video with resolution of not less than 470 TV lines. The imager shall have a minimum effective area of 768(h) x 494(v) pixels.

3.6.4 The camera shall include an electronic shutter control based upon average scene luminance and shall be equipped with an auto-iris lens that operates in tandem with the electronic shutter.

3.6.5 The imager luminance signal-to-noise ratio (S/N) shall be more than 50 dB.

3.6.6 The camera shall utilize automatic white balance.

3.6.7 The camera shall include a variable focal length lens with variable focus that can be adjusted, without opening up the camera housing, to suit the site geometry by means of a portable interface device designed for that purpose and manufactured by the detection system supplier.

3.6.8 The horizontal field of view shall be adjustable from 5.4 to 50.7 degrees minimum. A single camera configuration shall be used for all approaches in order to minimize the setup time and spares required by the user.

3.6.9 The lens shall also have an auto-focus feature with a manual override to facilitate ease of setup.

3.6.10 The camera shall incorporate the use of preset positioning that store zoom and focus positioning information. The camera shall have the capability to recall the previously stored preset upon application of power.

3.6.11 The camera shall be powered by 120 VAC 60 Hz. Power consumption shall be 15 watts or less under all conditions.

3.6.12 The camera shall be housed in a weather-tight sealed enclosure. The enclosure shall be made of 6061 anodized aluminum. The housing shall be field rotatable to allow proper alignment between the camera and the traveled road surface.

3.6.13 The enclosure shall be design so that the pan, tilt and rotation of the camera assembly can be accomplished independently without affecting the other settings.

3.6.14 The glass face on the front of the enclosure shall have an anti-reflective coating to minimize light and image reflections.

3.6.15 The camera enclosure shall be equipped with a sunshield. The sunshield shall include a provision for water diversion to prevent water from flowing in the camera's field of view. The camera enclosure with sunshield shall be less than 6" diameter, less than 18" long, and shall weigh less than 6 pounds when the camera and lens are mounted inside the enclosure.

3.6.16 The camera enclosure shall include a proportionally controlled heater to assure proper operation of the camera system at low temperatures and prevent moisture condensation on the optical faceplate of the enclosure.

3.6.17 When mounted outdoors in the enclosure, the camera shall operate satisfactorily in a temperature range from -34 °C to +60 °C and a humidity range from 0% RH to 100% RH.

3.6.18 The camera shall be powered by 120-240 VAC 50/60 Hz. Power consumption shall be 45 watts or less under all conditions.

3.6.19 Recommended camera placement height shall be 33 feet (or 10 meters) above the roadway, and over the traveled way on which vehicles are to be detected. For optimum detection the camera should be centered above the traveled roadway. The camera shall view approaching vehicles at a distance not to exceed 350 feet for reliable detection (height to distance ratio of 10:100). Camera placement and field of view (FOV) shall be unobstructed and as noted in the installation documentation provided by the supplier.

3.6.20 The camera enclosure for the standard camera sensor shall be equipped with separate, weather-tight connections for power and video cables at the rear of the enclosure. These connections may also allow diagnostic testing and viewing of video at the camera while the camera is installed on a mast arm or pole using a lens adjustment module (LAM) supplied by the VDS supplier. Video and power shall not be connected within the same connector.

3.6.21 The video signal output by the camera shall in accordance with NTSC and PAL format standards and shall be able to transmit VDP-usable video signals up to 1000 feet.

3.6.22 The video signal shall be fully isolated from the camera enclosure and power cabling.

3.7 Installation

3.7.1 The coaxial cable to be used between the camera and the VDP in the traffic cabinet shall be Belden 8281. This cable shall be suitable for installation in conduit or overhead with appropriate span wire. BNC plug connectors shall be used at both the camera and cabinet ends. The coaxial cable, BNC connector, and crimping tool shall be approved by the supplier of the video detection system, and the manufacturer's instructions must be followed to ensure proper connection.

3.7.2 The power cabling shall be 16 AWG three-conductor cable with a minimum outside diameter of 0.325 inch and a maximum diameter of 0.490 inch. The cabling shall comply with the National Electric Code, as well as local electrical codes. Cameras may acquire power from the luminaire if necessary.

3.7.3 The video detection camera shall be installed by factory-certified installers as recommended by the supplier and documented in installation materials provided by the supplier. Proof of factory certification shall be provided.

3.8 Warranty

3.8.1 The supplier shall provide a limited three-year warranty on the video detection system. See suppliers standard warranty included in the Terms and Conditions of Sale documentation.

3.8.2 During the warranty period, technical support shall be available from the supplier via telephone within 4 hours of the time a call is made by a user, and this support shall be available from factory-certified personnel or factory-certified installers.

3.8.3 During the warranty period, updates to VDP software shall be available from the supplier without charge.

3.9 Maintenance and Support

3.9.1 The supplier shall maintain an adequate inventory of parts to support maintenance and repair of the video detection system. These parts shall be available for delivery within 30 days of placement of an acceptable order at the supplier's then current pricing and terms of sale for said parts.

3.9.2 The supplier shall maintain an ongoing program of technical support for the video detection system. This technical support shall be available via telephone, or via personnel sent to the installation site upon placement of an acceptable order at the supplier's then current pricing and terms of sale for on site technical support services.

3.9.3 Installation or training support shall be provided by a factory authorized representative.

3.9.4 All product documentation shall be written in the English language.

3.10 Determination of Suitability

3.10.1 Any manufacturer of traffic signal control equipment or controller cabinets to be supplied under these Special Provisions shall provide a field and factory demonstration of the equipment proposed to be supplied. The demonstration shall be of equipment that has operated satisfactorily in accordance with specifications for a minimum of 180 calendar days subsequent to final acceptance by the jurisdiction to which it was supplied. This equipment shall have been performing those functions proposed under this contract. The demonstration shall be to **two members of the City of Victorville Engineering Department designated by the City Traffic Engineer.** The two person review team will determine the suitability of the equipment and their report shall be the final authority for determination of suitability of the proposed equipment. All expenses incurred in providing this demonstration shall be the responsibility of the manufacturer of the proposed equipment.

3.10.2 The following equipment has been determined to be suitable to be supplied under these Special Provisions:

a) Video Cameras
Vantage Camera Assembly, Variable Focal Length w/Vantage LAM Option

b) Interface Units
Vantage Edge2 Processor w/VRAS – Vantage Remote Access System
4ea- 1 channel Vantage Edge2 Processors shall be provided with each cabinet

c) Edge Connect Card
2ea Iteris Edge Connect modules shall be provided with each cabinet

d) Edge2 I/O module
1ea Iteris Edge2 I/O module shall be provided with each cabinet (BIU for SDLC connection)

3.10.3 Any departure from the equipment listed under Sec. 3.10.2 of these Special Provisions shall require Determination of Suitability of the proposed alternate equipment in accordance with Sec. 3.10.1 of these Special Provisions **prior to award of contract**. Failure to achieve a Determination of Suitability for the proposed alternate equipment shall be considered cause for rejection of the project bid as non-responsive.

4 EMERGENCY VEHICLE PRE-EMPTION SYSTEM

4.1 GENERAL DESCRIPTION AND REQUIREMENTS

A multimode priority control system shall operate in a manner that allows infrared, and GPS/Radio priority control technologies to interoperate and activate one another in a consistent manner. The priority control system shall consist of a matched system of vehicle equipment and intersection equipment capable of employing both data-encoded radio communications to identify the presence of designated priority vehicles, as well as data-encoded infrared signaling communications. In preemption mode, the data-encoded communication shall request the traffic signal controller to advance to and/or hold a desired traffic signal display selected from phases normally available. A record of system usage by agency identification number, vehicle classification and vehicle identification number shall be created. The system software shall support call history analysis and reporting across any subset of intersections and/or vehicles independent of activation method. System software shall also support both onsite and remote programming and monitoring of the priority control system.

The vehicle equipment may include a GPS radio unit and vehicle control unit or a data encoded infrared emitter employing either a strobe or LED based light source. The GPS receiver on the vehicle shall obtain vehicle location, heading and speed from the U.S. Department of Defense (DoD) operated satellites. The GPS radio vehicle equipment shall also monitor the vehicle's turn signal status. A 2.4 GHz spread spectrum/frequency hopping radio in the vehicle equipment shall transmit this data to nearby intersections, only when it is within radio communication range of an intersection, which is received by a similar radio located at the intersection. The vehicle radio shall communicate to intersection radios at distances up to at least 2,500 feet (762 m) with no obstructions. If an infrared data-encoded emitter is employed on the vehicle, it shall send an encoded infrared signal to the detector, with a range capability of 2,000 feet minimum.

Intersection detection equipment will consist of either a GPS receiver and radio transceiver or an infrared detector or both connected to a multimode phase selector located in the intersection controller cabinet. The GPS radio unit receives the data-encoded radio signal from the GPS radio equipped vehicle and transmits the decoded information through detector cable to the multimode phase selector for processing. The intersection radios also communicates to vehicles and other intersection radios at distances of up to at least 2,500 feet (762m) with no obstructions. The infrared detector receives the data-encoded infrared signal from the infrared equipped vehicle and transmits information through detector cable designed to convert infrared light energy at the proper wavelength into analog voltage signals that can be evaluated and decoded by the multimode phase selector.

The multimode phase selector shall be capable of receiving data encoded signals from either or both infrared and GPS radio detection equipment and combine the detection signals into a single set of tracked vehicles requesting priority activation. The multimode phase selector will process the vehicle information to ensure that the vehicle is (1) in a predefined approach corridor, (2) heading toward the intersection, (3) requesting priority, and (4) within user-settable range. The multimode phase selector shall treat the combined, single set of tracked calls with first come first served priority methodology within a given priority level. Arbitration between infrared signal intensity and GPS radio distance/ETA shall be first come first served methodology based on time of detection as each equipped vehicle reaches its programmed threshold.

When these conditions are met, the phase selector shall generate a priority control request to the traffic controller for the approaching priority vehicle. If the approaching GPS radio preemption equipped vehicle has an active turn signal, the approach intersection shall relay the priority request to the next nearest in-range intersection in the direction of the approaching vehicle's turn signal. The output of the phase selector may also be varied depending on the state of the approaching vehicle's turn signal.

To ensure priority control system integrity, operation and compatibility, all components shall be from the same manufacturer. The system shall offer compatibility with most signal controllers, e.g. NEMA (National Electrical Manufacturers Association) 170/2070 controllers. The system can be interfaced with most globally available controllers using the controller's preemption inputs. RS-232, USB and Ethernet interfaces shall be provided to allow management by on-site interface software and central software.

The central software shall manage the region's priority control system as a single, integrated system, independent of the particular activation method or methods (infrared or GPS/radio) used within the region. The central software shall allow each intersection within the region to be configured with one or more phase selectors with varying methods of activation; e.g., one infrared phase selector and one GPS/radio phase selector or a multimode phase selector. The central software shall allow each vehicle within the region to be

configured with priority control equipment with varying methods of activation; e.g., an infrared emitter and a GPS/radio vehicle control unit.

The central software shall support analysis of priority control activity at an intersection and/or for a vehicle as it is migrated between activation methods (e.g., migrated from infrared to GPS/radio). This analysis shall allow the user to readily determine whether the priority control system has retained its effectiveness across the migration. When a phase selector is removed or replaced at an intersection (e.g., replacing an infrared phase selector with a GPS/radio phase selector or multimode phase selector), call history and configuration history from that phase selector shall still be available for use in analysis and reporting in the central software.

The central software shall provide a means to filter the display such that only the information relevant to the activation method in use is shown to the user.

4.2 MATCHED SYSTEM COMPONENTS

The required signal preemption/priority system is comprised of matched system components described below:

A. GPS Radio System Components

1. Vehicle/Intersection radio/GPS module, Radio/GPS Antenna with factory terminated SMA connectors, and vehicle control unit. The radio/GPS module shall obtain the vehicle position, speed and heading information and transmit this information only when within range of a GPS radio preemption equipped intersection. The vehicle control unit shall communicate with the radio/GPS module and provide the interface to the vehicle in order to monitor the vehicle's turn signal status, provide activation and disable inputs as well as regulate the vehicle power provided to the radio/GPS module.
2. Intersection Radio/GPS Module. The intersection radio/GPS module shall transmit a beacon every second and receive the data transmitted by the vehicle equipment and relay this information to the phase selector as well as other system-equipped intersections. It shall also obtain position information from the GPS satellites.
3. Radio/GPS Cable. The radio/GPS cable shall carry the data received from the intersection radio/GPS unit to the phase selector. It shall also carry the power for the radio and GPS components provided by the phase selector. The same cable shall be used to carry the data between the vehicle radio/GPS unit and the vehicle control unit. The cable used to connect the radio/GPS unit to the phase selector shall be a shielded 10 conductor data cable; the use of coax cable is not permitted.

B. Infrared System Components

1. *Data-Encoded LED Infrared Emitter*. The data-encoded emitter shall trigger the system. It shall send the encoded infrared signal to the detector. It shall be located on the priority or probe vehicle.
2. *Remote Coding Unit.* The remote coding unit shall be capable of remotely programming the data-encoded LED infrared emitter without the use of a computer. The remote coding unit will not be available for use with the OEM version of the data-encoded LED emitter.
3. *Infrared Detector.* The detector shall change the infrared signal to an electrical signal. It shall be located at or near the intersection. It shall send the electrical signal via the detector cable to the phase selector.
4. *Detector Cable.* The detector cable shall carry the electrical signal from the detector to the phase selector.

C. Multimode System Components

1. *Multimode Phase Selector*. The multimode phase selector shall recognize inputs from both infrared and GPS/radio activation methods at the intersection and supply coordinated inputs to the controller. The multimode phase selector shall process the data in order to validate that all parameters required for granting a priority request are met. It shall be located within the controller cabinet at the intersection. It shall request the controller to provide priority to a valid priority vehicle by connecting its outputs to the traffic controller's preemption inputs.
2. *Card Rack*. The card rack shall provide simplified installation of a phase selector into controller cabinets that do not already have a suitable card rack.
3. *Auxiliary Interface Panel*. The auxiliary panel shall provide additional preemption outputs if needed. It shall also provide a connection point for the phase selector to monitor the status of the intersection's green lights (green sense). Additional RS-232 communication ports may also be accessed via this

panel. If additional outputs are not required, an auxiliary harness shall be used to monitor the status of the intersection's green lights.

4. *Base Station.* The base station module is used at fire stations that are located very close to intersections. When the base station is activated, all nearby equipped intersection/s or only those intersections in the planned direction of travel shall immediately begin requesting preemption from the traffic controller. The base station shall wirelessly communicate to intersections near the station that can be activated from the base station controller and/or passing vehicles that are equipped with GPS radio vehicle equipment.

4.3 SYSTEM COMPONENT SPECIFICATIONS

4.3.1 Multimode Phase Selector

4.3.1.1. The multimode phase selector recognizes inputs from both infrared and GPS/radio activation methods at the intersection and supplies coordinated inputs to the controller.

4.3.1.2. The multimode phase selector is designed to be installed in the traffic controller cabinet and is intended for use directly with numerous controllers. These include California/New York Type 170 controllers with compatible software, NEMA controllers, or other controllers along with the system card rack and suitable interface equipment and controller software.

4.3.1.3. The multimode phase selector will be a plug-in, four channel, multiple-priority, multi-modal device intended to be installed directly into a card rack located within the controller cabinet. The multi-mode phase selector shall be capable of using existing infrared or GPS/radio system card racks,

4.3.1.4. The multimode phase selector may be powered from either +24 VDC or 120VAC.

4.3.1.5. The multimode phase selector shall support front-panel RS-232, USB and Ethernet interfaces to allow management by on-site interface software and central software. An RS-232 port shall be provided on the rear card edge of the unit. Additional RS-232 communication ports shall be available using the Auxiliary Interface Panel.

4.3.1.6. The multimode phase selector shall include the ability to directly sense the green traffic controller signal indications through the use of dedicated sensing circuits and wires connected directly to field wire termination points in the traffic controller cabinet. This connection shall be made using the auxiliary interface panel.

4.3.1.7. The multimode phase selector shall have the capability of storing a minimum of 10,000 priority control calls. When the log is full, the phase selector shall drop the oldest entry to accommodate the new entry. The phase selector shall store each call record in non-volatile memory and shall retain the record if power terminates. Each preemption record entry shall include the following points of information about the priority call:

a. Agency: Indicates the operating agency of the vehicle.
b. Classification: Indicates the class type of vehicle.
c. Identification number: Indicates the unique ID number of the vehicle.
d. Priority level: Indicates the vehicle's priority level (High, Low or Probe).
e. Direction: Channel A, B, C, or D; indicates the vehicle's direction of travel.
f. Call duration: Indicates the total time in seconds the priority status is active.
g. Final greens at end of call: Indicates which phases are green at the end of the call.
h. Duration of the final greens: Indicates the total time final greens were active at the end of call.
i. Time and date call started and ended: Indicates the time a priority call started and ended, provided in seconds, minutes, hours, day, month, and year.
j. Turn signal status: Indicates the status of the turn signal during the call.
k. Priority output active: Indicates if the phase selector requested priority from the controller for the call.
l. Historical no preempt cause: Indicates a history of conditions, which may have prevented a call or caused a call to terminate.
m. Speed of vehicle: entry speed, exit speed, average speed through call,
n. Relative priority: relative priority of vehicle class logged at time of call,
o. Directional priority: directional priority logged at time of call,
p. Preempt output used
q. Signal intensity: maximum and minimum infrared signal intensity during call.

4.3.1.8. The multimode phase selector shall support a minimum of 5000 code pairs (agency ID, vehicle ID) providing unique vehicle identification and system security implementation at the vehicle level.

4.3.1.9. The multimode phase selector shall include several programmable control timers that will limit or modify the duration of a priority control condition, by channel. The control timers will be as follows:

a. MAX CALL TIME: Sets the maximum time that a channel is allowed to be held active by a specific vehicle. It shall be settable from 60 to 65,535 seconds in one-second increments. The factory default shall be 360 seconds.
b. OFF APPROACH CALL HOLD TIME: Sets the amount of time a call is held on a channel after the vehicle has left the approach. It shall be settable from 4 to 255 seconds in one-second increments. The factory default shall be 6 seconds.
c. LOST SIGNAL CALL HOLD TIME: Sets the amount of time that a call is held on a channel after the intersection has lost contact with the vehicle. It shall be settable from one to 255 seconds in one-second increments. The factory default shall be six seconds.

4.3.1.10. The multimode phase selector shall have the ability to enable or disable all calls of both priority levels. This shall be independently settable by channel.

4.3.1.11. A unique intersection name, which shall be broadcasted, shall be settable for each multimode phase selector.

4.3.1.12. Up to 25 different radio channels shall be available to be assigned to the multimode phase selector.

4.3.1.13. The multimode phase selector shall operate in a mode that shall vary the output based on the status of the approaching vehicles turn signal. Additional outputs available on an Auxiliary Interface Panel may be needed. Settings shall be available for this mode as follows:

a. Output mappings for each channel.
b. Separate setting for each of the four channels.
c. Separate settings for each left turn, right turn or straight signal status for each of the above four channels.

4.3.1.14. The multimode phase selector's default values shall be programmable by the operator on-site or at a remote location.

4.3.1.15. The multimode phase selector shall be capable of three levels of signal discrimination, as follows:

a. Verification of the presence of the signal of either High priority or Low priority.
b. Verification that the vehicle is approaching the intersection within a prescribed Estimate Time of Arrival (ETA).
c. Determination of when the vehicle is within the prescribed range, either by intensity level or distance from the intersection.

4.3.1.16. The multimode phase selector shall include one opto-isolated NPN output per channel that provides the following electrical signal to the appropriate pin on the card edge connector:

a. 6.25Hz ± 0.1Hz 50% on/duty square wave in response to a Low priority call.
b. A steady ON in response to a High priority call.
c. The phase selector will also have the option of providing separate outputs for High and Low priority calls for controllers that do not recognize a 6.25 Hz pulsed Low priority request.
d. Additional outputs or output modes shall also be available on the auxiliary interface panel.

4.3.1.17. The multimode phase selector shall accommodate three methods for setting range thresholds for High and Low priority signals:

a. Based on the approaching vehicle's Estimated Time of Arrival (ETA). This shall be settable between 0 and 255 seconds in one second increments. The factory default shall be 30 seconds. The ETA threshold shall be independently settable by each of the following parameters: vehicle class, approach channel and priority level.
b. Based on the approaching vehicle's distance from the intersection. This shall be settable between 0 and 5,000 feet in one foot increments. The factory default shall be 1000 feet. The Distance threshold shall be independently settable by each of the following parameters: vehicle class, channel and priority level.
c. Based on infrared emitter intensity the system shall accommodate setting a separate range from 200 feet (61m) to 2,500 feet (762m) with 1,200 range set points for both High and Low priority signals.

4.3.1.18. The multimode phase selector shall support three types of green sense logging.

a. Preemption impact logging which measures and records the impact of an individual signal preemption upon a measured green cycle time.
b. TSP impact logging which measures and records whether a TSP advantage was gained during a request and the amount of early or extended green applied.
c. Green cycle logging records changes in the average green cycle time. When the average time is measured to have changed, a new log entry is made.

4.3.1.19. The multimode phase selector will have the following indicators:

a. A STATUS indicator that illuminates steadily to indicate proper operation.
b. A link indicator on the multimode phase selector illuminates green if other radios are within range.
c. A radio indicator that indicates the status of the communication between the vehicle control unit and the radio/GPS unit. The indicator illuminates amber to indicate that there is communication between

the vehicle control unit and the radio/GPS unit. The indicator illuminates green to indicate that a GPS signal has been acquired and the 2.4 GHz radio is on the air.

d. LED indicators (one for High priority, one for Low priority) for each channel display active calls as steady ON and pulse to indicate pending preemption requests.

4.3.1.20. The phase selector shall have a test switch for each channel to test proper operation of High or Low priority.

4.3.1.21. The multimode phase selector shall utilize the time obtained from the GPS satellites to time stamp the activity logs. The user will set the local time zone (offset from GPS time) via the interface software.

4.3.1.22. The interface software shall have the capability to set the multimode phase selector to automatically adjust the GPS time offset for changes in daylight savings time.

4.3.1.23. An auxiliary interface panel shall be available to facilitate interconnections between the multimode phase selector and traffic cabinet wiring as well as provide additional outputs.

4.3.1.24. *A multimode phase selector port may be configured to output GPS data at a user selectable baud rate in the NMEA 0183format. It will output the following messages (depending on the baud rate):*

a. GGA - Global Positioning System Fix Data (2400 baud and higher)
b. GSA- GPS DOP and active satellites (2400 baud and higher)
c. GSV - Satellites in view (4800 baud and higher)
d. RMC - Recommended Minimum Navigation Information (1200 baud and higher)

For traffic controllers that are capable of interpreting GPS data in the NMEA 0183 serial format, this GPS data may be used to synchronize the controller's clock using the GPS date and time.

Additionally, a discrete output from the phase selector may be used to reset the traffic controller using the clock reset function/input of the controller. This output shall be available on the Auxilliary Interface Panel. This output shall be referenced to the GPS date and time.

This output may be configured as follows:

a. Enabled or Disabled
b. Time of day reset is activated (12:00 A. M. to 6:00 A.M. in 30 minute increments)
c. Duration of reset pulse (100-2,000 milliseconds)
d. Repeat every 1 to 30 days

4.3.1.25. The multimode phase selector shall provide the user with call play-back logs for the last 100 priority activation requests. Each log shall contain up to the last 250 seconds of a call. The call play-back logs shall include:

a. GPS/radio based calls shall record vehicle speed, heading, signal quality, GPS location, coded ID, green sense state, call status (active, pending, disabled), approach channel and turn signal status and priority information.
b. Infrared based calls shall record intensity, coded ID, green sense state, call status (active, pending, disabled), approach channel and priority information.
c. Data shall be recorded once per second. Recording terminates at call end.

4.3.1.26. The following diagnostic tests are incorporated in the multimode phase selector

a. Power up built in test
b. Communications port tests
c. Preemption output test call
d. Detector response test

4.3.1.27. The multimode phase selector shall be capable of call bridging. Call bridging enables the treatment of two vehicles requesting priority activation to have their calls linked together to hold a call to the controller so that they may traverse the approach together.

4.3.1.28. The multimode phase selector shall be capable of directional priority. Priority for calls may be assigned to individual approach channels such that calls in a particular direction will be given priority over calls in competing directions within the same priority level.

4.3.1.29. When used with a GPS Radio Unit, the multimode phase selector shall relay a priority request to the next adjacent intersection based on the direction indicated by the vehicle's turn signals.

4.3.1.30. The multimode phase selector shall be capable of utilizing time plans to allow users to vary priority activation by time of day, or for a specific time period such as special events. Time plans shall be configured via system software.

4.3.1.31. The multimode phase selector shall support evacuation mode for low priority calls. Upon activation of this mode from the central management software, low priority vehicle calls shall be recognized by the multimode phase selector as if they were high priority vehicle calls for a temporary period of time as

defined by the user. This mode shall be supported for both infrared and GPS radio emitters. Vehicles transmitting high priority signals shall continue to maintain priority over the evacuation mode priority vehicles.
4.3.1.32. The multimode phase selector shall allow relative priority. Relative priority allows emitter classes to be used as an additional level of prioritization within priority levels (i.e. high and low priority levels have different sets of relative priorities). Relative priority shall support up to 15 unique classes in each priority level (High and Low). Relative priority class level 15 will have the highest weight and 1 the lowest weight in each. If relative priority is enabled, a priority call will be granted to the caller with the higher class level within high and low priority levels. A vehicle with a call granted, shall be able to have its call taken away by a higher level class vehicle. The system shall provide a lockout threshold that once met, shall disallow higher relative priority calls from taking away a call. Separate thresholds for infrared and GPS/radio calls shall be provided. Infrared call thresholds shall be specified as an intensity with a default value of 1,000. GPS/radio call thresholds shall be specified as an ETA in seconds. The default is ETA shall be 12 seconds. Threshold values for both types of calls shall be settable via system software. High priority calls will always be served over low priority calls regardless of either's relative class. Preemption for vehicles with the same base priority (high, low) and the same relative priority is done using the default first come, first served mechanism. Relative priority is capable of being enabled or disabled using system software. Relative priority for high and low can be separately enabled or disabled using system software. The default settings for all relative priority (high and low) values will be 15. Relative priority shall be disabled by default for both high and low priority.

4.3.2. Remote Coding Unit

4.3.2.1. The remote coding unit shall be capable of remotely programming and reading the following parameters from the data-encoded LED emitter without the use of a computer:
- a. Vehicle Class and Vehicle ID
- b. Disable operation mode
- c. Visible LED behavior

4.3.2.2. The unit shall be able to reset the emitter to factory defaults.
4.3.2.3. The unit including all electronics shall be 6.3 inches (16 cm) long, 3.7 inches (9.4 cm) wide and 1 inch (2.5 cm) thick. The unit shall have an LCD display and a keypad.
4.3.2.4. The unit shall operate on four AAA batteries.

4.3.3.Infrared Detector

4.3.31. The required detector will be a lightweight, weatherproof device capable of sensing and transforming pulsed infrared energy into electrical signals for use by the phase selection equipment.
4.3.32. The infrared detector will be designed for mounting at or near an intersection on mast arms, pedestals, pipes or span wires.
4.3.33. Each infrared detector will be supplied with mounting hardware to accommodate installation on mast arms. Additional hardware will be available for span wire installations. Additional hardware may be needed.
4.3.34. The infrared detector design will include adjustable tubes that lock into position, to enable their reorientation for span wire mounting without disassembly of the unit.
4.3.35. The detector will accept infrared signals from one or two directions and will provide single or dual electrical output signal(s).
4.3.36. The infrared detector will be available in three configurations:
a. Uni-directional with one output channel.
b. Bi-directional with one output channel.
c. Bi-directional with two output channels.
4.3.37. The detector will allow aiming of the two infrared sensing inputs for skewed approaches, wide roads or slight curves.
4.3.38. The infrared detector will have a built-in, labeled terminal block to simplify wiring connections.
4.3.39. The infrared detector will receive power from the phase selector and will have internal voltage regulation to operate at 24 volts DC.
4.3.310. The infrared detector will respond to a clear lens data-encoded emitter with 0.84 (±10%) Joules of energy output per flash at a distance of 2,500 feet (762m) under clear atmospheric conditions. If the emitter is configured with a visible light filter, the detector will respond at a distance of 1800 feet (549m) under clear atmospheric conditions. The noted distances will be comparable day and night.
4.3.311. The infrared detector will deliver the necessary electrical signal to the phase selector via a detector cable up to 1,000 feet (305m) in length.

4.3.4. Detector Cable

4.3.4.1. The detector cable will deliver sufficient power from the phase selector to the infrared detector and will deliver the necessary quality signal from the detector to the phase selector over a non-spliced distance of 1,000 feet (305m).

4.3.4.2. The cable will be of durable construction to satisfy the following installation methods:

a. Direct burial.
b. Conduit and mast arm pull.
c. Exposed overhead (supported by messenger wire).

4.3.4.3. The outside diameter of the detector cable will not exceed 0.3 inches (7.62mm).

4.3.4.4. The insulation rating of the detector cable will be 600 volts minimum.

4.3.4.5. The temperature rating of the detector cable will be +158°F (+70°C) minimum.

4.3.4.6. The conductors will be shielded with aluminized polyester and have an AWG #20 (7 x 28) stranded and individually tinned drain wire to provide signal integrity and transient protection.

4.3.4.7. The shield wrapping will have a 20% overlap to ensure shield integrity following conduit and mast arm pulls.

4.3.4.8. The detector cable will be comprised of three signal wires and a drain wire. Each wire will be 20 AWG (7 x 28). The capacitance will not exceed 48 pF per foot a 1 Khz. The detector cable wires will be stranded, individually tinned copper, color-coded insulation as follows:

a. Orange for delivery of detector power (+).
b. Drain wire for detector power return (-).
c. Yellow for detector signal #1.
d. Blue for detector signal #2 or ground, depending on model of detector being used.

4.3.5. Data-Encoded Infrared Emitter and Programming Software

4.3.5.1. The required data-encoded emitter will generate the infrared signal, which serves as the trigger to the rest of the priority control system. The infrared signal generated by the data encoded emitter will be a series of infrared pulses from an array of infrared LEDs with integral power supply. The flash signal will consist of a fixed frequency base signal and a coded overlay signal that can be used to transmit information.

4.3.5.2. The data-encoded LED emitter will be powered by the DC voltage supplied from the battery of the vehicle, 10 to 32 volts DC. The unit will be equipped with a weatherproof in-line fuse holder and a weatherproof quick-disconnect plug.

4.3.5.3. The unit, including all electronics, will be miniaturized to a size no greater than 5.9 inches (15 cm) wide by 3.8 inches (9.7 cm) high by 2.3.5 inches (8.9 cm) deep to accommodate standalone and internal lightbar installation.

a. Alternately for a data-encoded LED based emitter intended for Lightbar Original Equipment Manufacturers (OEMs). The unit, including all electronics, will be miniaturized to a size no greater than 5.7 inches (14.5 cm) wide by 1.2 inches (3 cm) high by 1.6 inches (4 cm) deep to accommodate internal lightbar installation.

4.3.5.4. The data-encoded emitter will be supplied complete with a 25-foot (7.5 m) installation cable.

a. The installation cable for the LED OEM version will be provided by the OEM.

4.3.5.5. The flash sequence generated by the data-encoded emitter will carry three types of information:

a. The first type will be one of three distinctly different base frequencies of either approximately 10Hz for a Low priority emitter, or approximately 14Hz for a High priority emitter or approximately 12Hz for Probe frequency.
b. The second type of information generated by the data-encoded emitter will be a Vehicle classification and identification code that is interleaved into the base frequency flashes. Setting the vehicle classification and identification code will be accomplished through emitter programming software. Each data-encoded emitter will be capable of setting 10 different classifications with 1,000 different identification numbers per class for a total of 10,000 codes per base frequency.
c. The third type of information generated by the data-encoded emitter will be reserved for setting the intersection detection range. A specially equipped emitter control module with a range setting command switch will enable the traffic engineer to activate the range code from his/her vehicle. The system will accommodate setting a separate range from 200 feet (61m) to 2,500 feet (762m) with 1200 range set points, for both High and Low priority signals.

4.3.5.6. The emitter will include a multi-purpose communication port compliant with the SAE J1708 communication standard. This port enables unit configuration to be set into the emitter and read from the emitter. It also allows real-time communication between the vehicle and the emitter.

4.3.5.7. While operating, the data-encoded emitter will conduct self-diagnostics designed to monitor data

transmission integrity by checking for missing pulses. Any failures of the self-diagnostic tests will be displayed by flashing of the ON/OFF switch indicator light.

4.3.5.8. An ON/OFF switch (available for each data-encoded emitter) will be equipped with an indicator light providing internal diagnostics to assist in troubleshooting. The indicator light will operate as follows:

a. Steady on when the emitter is operating
b. Flash at a 0.5Hz rate when the emitter is intentionally disabled
c. Flash at a 2Hz rate when the emitter is inoperative

4.3.5.9. The LED emitters will contain visible light LEDs which may be user configured as follows

a. Flash at emitter flash rate during normal operation. Flash at diagnostic rate when unit has failed or is in disable mode. The visible LEDs will flash at the same rate as the infrared LEDs during normal operation. When the emitter is in Disable Mode; the LEDs will flash once every two seconds. When the emitter has failed, the LEDs will flash two times per second.
b. Off during normal operation, Flash at diagnostic rate when unit has failed or is in disable mode. The visible LEDs will be off during normal operation. When the emitter is in Disable Mode; the LEDs will flash once every two seconds. When the emitter has failed the LEDs will flash two times per second.
c. Flash once per second for 10 seconds at power up. The visible LEDs will flash once per second for ten seconds after initial power up. After that, the visible LEDs will shut off.
c. Always Off: The visible LEDs will remain off at all times.

4.3.5.10. The data-encoded emitter will be equipped with a disable input that, when activated, the emitter will stop flashing, thereby eliminating the possibility of inadvertent signal transmission after the priority vehicle has arrived at its destination. The disable input will be programmable to operate in either a latching or non-latching mode. Operation of the disable input will be programmable using software.

a. The data encoded infrared LED based emitters use angle of half intensity 0 = +/- 10 degrees LEDs to provide precise directionality control.

4.3.5.11. The data-encoded emitter will operate over a temperature range of –30°F (-34°C) to +165°F (+74°C).

4.3.5.12. The data-encoded emitter will operate over a relative humidity range of 5% to 95%.

4.3.5.13. Windows™ based software will be available at no charge for programming the emitter through its J1708 compatible multi-purpose port. The communication protocol will be made available upon request for creating software to implement real-time communication.

4.3.5.14. The emitter will provide operating modes that allow it to be powered on with the strobe/LEDs active or inactive.

4.3.6 Card Rack

4.3.6.1. The required card rack will provide simplified installation of a phase selector into controller cabinets that do not already have a suitable card rack.

4.3.6.2. The card rack will be factory wired to one connector, located behind the card slot, and a terminal block, located next to the phase selector slot, on the front of the card rack.

4.3.6.3. The card rack connector on the front will provide for all connections to the traffic controller.

4.3.6.4. The card rack will provide labeled terminal blocks for connecting the primary infrared detectors to a phase selector.

4.3.7. Interface Software

4.3.7.1. The priority control interface software will be provided on a single CD-ROM or via download to interface with the phase selector. It must run on most IBM-compatible computers equipped with Windows™ 2003 Server or Windows™ XP.

4.3.7.2. The priority control interface software must accommodate:

a. Setting up and presenting user-determined system parameters.
b. Viewing and changing settings.
c. Viewing activity screens.
d. Displaying and/or downloading records of previous activity showing class, code, priority, direction, call duration, final greens at end of call, duration of final greens, time call ended in real time plus maximum signal intensity (vehicle location information).

4.3.7.3. The priority control interface software must accommodate operation via a mouse or via the keyboard, or in combination.

4.3.7.4. The priority control interface software must provide menu displays to enable:

a. Setting of valid vehicle ID and class codes.
b. Establishing signal intensity thresholds (detection ranges), modem initialization, intersection name and timing parameters.
c. Setting of desired green signal indications during priority control operation and upload and download capability to view.

d. Resetting and/or retrieving logged data and priority vehicle activity.
e. Addressing for each card in a multi-drop connected system.
f. Confirmation light configuration.
g. Manual Control Parameters.

4.3.7.5. The interface software will provide readout of noise levels detected by the detectors. This noise level will serve as a troubleshooting tool.

4.3.7.6. The interface software shall provide a real-time activity screen which will provide the following information.

a. Call intensity value even if below threshold.
b. Vehicle Class and ID.
c. Emitter priority level.
d. Indication of detection on primary or auxiliary detector.
e. Indication if call is being serviced or is pending.
f. Indication if vehicle is in range.
g. Provides readout for four separate vehicles per channel.
h. Detector noise level readout.
i. Green phase monitoring with information on the current greens.

4.3.8 Central Management Software

4.3.8.1. The priority control central management software will be provided with installation support services to interface with phase selectors via customer communication architecture. It must run on Windows™ 2003 Server or Windows™ XP.

4.3.8.2. The priority control central management software must accommodate:

a. Setting up and presenting user-determined system parameters.
b. Viewing and changing settings.
c. Viewing activity screens.
d. Ability to cross reference operating records with database stored detailed vehicle and intersection attributes.
e. Displaying and/or downloading records of previous activity showing class, code, priority, direction, call duration, final greens at end of call, duration of final greens, time call ended in real time plus maximum signal intensity (vehicle location information). This information may be used to reconstruct the route taken by a priority (or probe) vehicle to track the vehicle.
f. Provide ad-hoc analysis capability of previous activity showing class, code, priority direction, call duration, final greens at end of call, duration of final greens, time call ended in real time plus maximum signal intensity (vehicle location information).
g. Provide scheduled reporting of operational activity including total system usage, usage by vehicle and intersection, unauthorized vehicles, long green time and long call duration.
h. Maintain security code assignments by jurisdiction and vehicle. Allow for central control over configuration of security in the phase selector.

4.3.8.3. The central management software must provide menu displays to enable the following in the phase selector:

a. Setting of valid vehicle ID and class codes.
b. Setting of desired green signal indications during priority control operation and upload and download capability to view.
c. Retrieving logged data and priority vehicle activity.
d. Addressing for each card in a multi-drop connected system.
e. Confirmation light configuration.
f. NEMA Control Parameters.

4.3.8.4. The central management software will provide readout of noise levels detected by the detectors. This noise level will serve as a troubleshooting tool.

4.3.8.5. The central software shall provide a real-time activity screen which will provide the following information.

a. Call intensity value even if below threshold.
b. Vehicle Class and ID.
c. Emitter priority level.
d. Indication of detection on primary or auxiliary detector.
e. Indication if call is being serviced or is pending.
f. Provides readout for four separate vehicles per channel.
g. Detector noise level readout.
h. Green phase monitoring with information on the current greens.

4.3.9 Serial to Ethernet Port Server.

4.3.9.1. The Serial to Ethernet Port server shall enable the serial communication from the Phase selector to the Ethernet switch located in the signal cabinet. It shall conform to the following requirements.

Management	HTTP/HTTPS, CLI, SNMP (read/write), Digi Port Authority-Remote management diagnostics and auto-discovery tool
Protocols	UDP/TCP, DHCP/RARP/ARP-Ping for IP Address assignment, PPP, Extended Telnet RFC 2217, Telnet, Reverse Telnet, Modbus to Modbus/TCP protocol conversion support
Security	SSHv2, SSL/TLS
Software	Device-initiated patented RealPort® COM port redirector
Status LEDs	Link, Activity, Power, Status
Operating Systems	AIX, HP-UX, Linux®, SCO® OpenServer™ 5, SCO® OpenServer™ 6, Solaris™ Intel, Solaris™ SPARC, Windows XP®, Windows Server® 2003, Windows Server® 2008, Windows Vista®; Note: TCP/UPD Socket Services are operating system independent
Dimensions (L x W x D)	5.25 in x 3.33 in x 0.95 in (13.34 cm x 8.46 cm x 2.42 cm)
Weight	2.25 oz (64.00 g)
Other	Full modem and hardware fl ow control, Modem emulation, Port buffering, RJ-45/DB-9F crossover cable included for optional serial configuration
Interfaces	
Serial Ports (2)	2- RS-232 RJ-45; Up to 230 Kbps throughput; Signal support for TXD, RXD, RTS, CTS, DTR, DSR, DCD
Ethernet Ports	1 RJ-45 10/100 Mbps 10/100Base-T (auto-sensing); Full or half duplex
Power Requirements	
Power Input	9-30VDC with locking barrel power connector
Power Supply (included)	12VDC/.5A max out; 120VAC in (wall mount);
Power Consumption	Typical: 4 W; Max: 6 W
Surge Protection	4 kV burst (EFT) per EN61000-4-4, 2 kV surge per EN61000-4-5
Enviromental	
Operating Temperature	0° C to +60° C (32° F to 140° F)
Storage Temperature	-40° C to +85° C (-40° F to +185° F)
Relative Humidity	5% to 95% (non-condensing)
Ethernet Isolation	1500VAC min per IEEE802.3/ANSI X3.263
Serial Port Protection (ESD)	+15 kV air 6 AP and +8 kV contact discharge per IEC 100-4-2
Approvals	
Safety	UL/CUL 60950, IEC 60950 & CB
Emissions/Immunity	CE, FCC Part 15 (Class A), EN55024, EN55022 Class A, AS/NZS 3548, CISPR 22, VCCI V-3/99.05

4.4 RELIABILITY

4.4.1 All equipment supplied as part of the infrared priority control system intended for use in the controller cabinet will meet the following electrical and environmental specifications spelled out in the NEMA Standards Publication TS2 1992, Part 2:

1. Line voltage variations per NEMA TS2 1992, Paragraph 2.1.2.
2. Power source frequency per NEMA TS2 1992, Paragraph 2.1.3.
3. Power source noise transients per NEMA TS2 1992, Paragraph 2.1.6.1.
4. Temperature range per NEMA TS2 1992, Paragraph 2.1.5.1.
5. Humidity per NEMA TS2 1992, Paragraph 2.1.5.2.
6. Shock test per NEMA TS2 1992, Paragraph 3.13.9.
7. Vibration per NEMA TS2 1992, Paragraph 3.13.8.

4.4.2 Each piece of equipment supplied as part of the priority control system intended for use in or on priority vehicles will operate properly across the entire spectrum of combinations of environmental conditions per the individual component specifications. Vehicle equipment should be tested to SAE J575 and J1455 for one or more of the following tests: vibration, moisture, dust exposure, corrosion, warpage, humidity, operational mechanical shock.

4.5 QUALIFICATIONS

The manufacturer of the required infrared priority control system will verify the proven, safe operation of the system's infrared communication technology. Upon request, the manufacturer will produce a list of user agencies having experience interfacing priority control equipment with electromechanical, solid state and programmable controller types.

4.6 RESPONSIBILITIES

A. The manufacturer of the required infrared priority control system and/or the manufacturer's representative will provide responsive service before, during and after installation of the priority control system. The manufacturer and/or the manufacturer's representative, as consultants to the installer, will provide certified, trained technicians having traffic systems industry experience and operational knowledge of priority control systems.

B. The lowest fully responsive bidder will be required to supply working production components specified in this Specification within 14 calendar days from the purchase order date. Failure to do so will render the bid non-responsive.

C. Paragraph B. will not be required if, prior to the bid opening, the bidder demonstrated to the city that the equipment bid meets these specifications.

4.7 WARRANTY

A. The manufacturer of the required infrared priority control system will warrant that, provided the priority control system has been properly installed, operated and maintained, component parts of a matched component system (see Section II) that prove to be defective in workmanship and/or material during the first five (5) years from the date of shipment from the manufacturer will be covered in a documented system-protection plan, plus provide an added five-year maintenance coverage for repair or replacement at a fixed deductible charge for a total of ten (10) years of product coverage.

B. The protection plan will warrant that component parts of a matched component system that are not subject to coverage limitations and prove to be defective in workmanship and/or material during the first five (5) years from the date of shipment from manufacturer will be repaired at no charge, and that extended coverage with a fixed repair deductible will be available for an additional five (5) years.

C. In total, the warranty/maintenance coverage must assure that system components will be available to allow system operation during the ten (10) year warranty/maintenance coverage.

D. A copy of the manufacturer's written warranty outlining the conditions stated above will be supplied with the bid. Coverage and coverage limitations are to be administered as detailed in the manufacturer’s Warranty/Maintenance document.

4.8 CERTIFICATE OF INSURANCE

The manufacturer of the required infrared priority control system will provide a certificate of product liability insurance protection for $5,000,000 assuring the priority control user that the manufacturer is insured against civil damages if proven to be at fault for an accident due to equipment failure within the system of matched priority control components. This certificate, however, need not, and is not meant to, provide liability insurance protection to the priority control system dealer, installer or user.

4.9 CERTIFICATION

The manufacturer of the required infrared priority control system will certify that all component products are designed, manufactured and tested as a system of matched components and will meet or exceed the requirements of this specification.

4.10 Determination of suitability

The following equipment shall be provided as part of this project:

4.11.1 Emitters

"Optical Emitters" supplied as part of this contracts shall be in accordance with Sec. 4.3.1 of these Special Provisions complete with all necessary mounting hardware and connectors. Unit shall be GTT Opticom 794H. or pre-approved equal.

4.11.2 Remote Coding Unit

"Remote Coding Unit " in accordance with Sec. 4.3.2 of these Special Provisions complete with all necessary cables and connectors. Remote Coding Unit shall be GTT Opticom RC790 or pre-approved equal..

4.11.3 Detectors

Four "Optical Detectors" in accordance with Sec. 4.3.3 of these Special Provisions complete with all necessary mounting hardware and connectors, shall be furnished for each intersection supplied under these Special Provisions. Optical detector shall be bi-directional up to 180°. Unit shall be GTT Opticom 721. or pre-approved equal.

4.11.4 Detector Cable

"Detector Cable" in accordance with Sec. 4.3.4 of these Special Provisions shall be furnished for the entire intersection under these Special Provisions. Cable shall be GTT Opticom or pre-approved equal.

4.11.5 Phase Selector

"Multimode Phase Selector" in accordance with Sec. 4.3.1 of these Special Provisions complete with all necessary mounting hardware and connectors, shall be furnished with each cabinet supplied under these Special Provisions. Unit shall be GTT Opticom 764 or pre-approved equal.

4.11.6 Card Rack

"Card Rack" in accordance with Sec. 4.3.6 of these Special Provisions shall be GTT rack.

4.11.7 System Interface Software

"System Interface Software" in accordance with Sec. 4.3.7 of these Special Provisions shall be furnished. Software shall be provided on either CD, DVD or "flash memory" USB drive.

4.11.8 System Central Management Software

"System Central Management Software" in accordance with Sec. 4.3.8 of these Special Provisions shall be furnished. License shall be provided to authorize server software on one server and two Clients. Server License shall be for 10 intersections. Software shall be provided on either CD, DVD or "flash memory" USB drive.

4.11.9 Serial to Ethernet Port Server

"Serial to Ethernet Port Server" in accordance with Sec. 4.3.9 of these Special Provisions shall be furnished. Unit shall be Comtrol RTS 2-Port or pre-approved equal.

5. CONFLICT MONITOR

5.1 General description and requirements

The conflict monitor shall meet or exceed the standards of NEMA Publication TS 1-1989, Section 2 and 6, for 12 Channel Conflict Monitors for use in traffic control systems.

5.2 Features

The conflict monitor shall be a 12-channel NEMA type monitor with the following special features:

5.2.1 All features are easily programmable using the 20-key keypad and 16 column by 4 line LCD display.

5.2.2 Have an input system with audible tone to indicate an Accept or Reject entry feature.

5.2.3 AC Line Monitor - the incoming voltage must be able to be monitored and viewed during operation. Dips, surges, and long term over-voltage conditions are to be logged. A display listing the number of power disturbances since the last start up and a log of at least 30 previous power events shall be provided.

5.2.4 Monitor shall have on board diagnostics.

5.2.5 Monitor shall have Security level of entry.

5.2.6 Monitor shall be able to store up to 20 previous Faults in non-volatile memory.

5.2.7 Monitor shall be able to store up to 30 previous power events in non-volatile memory.

5.2.8 Monitor shall be capable of programming per channel the minimum Short Green interval.

5.2.9 Monitor shall be capable of programming per channel the minimum Short Yellow interval.

5.2.10 Monitor shall be capable of programming per channel the Red Fail Inhibit.

5.2.11 A RS232 communications port shall be on the monitor so that conflicts, type of conflicts and power failure information can be dumped to a printer, laptop computer, or to a communication system through a traffic controller.

5.2.12 A cable shall be provided to link the conflict monitor to the Traffic signal controller.

5.3 Compatibility

Unit shall be fully compatible and provide communication with the traffic signal controller required under these special provisions.

6. TRAFFIC SURVEILLANCE EQUIPMENT

6.1 Four port Video Server

6.1.1 Shall connect up to four analog cameras and transmit digital video from all four channels simultaneously via an Ethernet connection.

6.1.2 Shall provide a minimum resolution of 720X576.

6.1.3 Frame rate Motion JPEG Up to 25 (NTSC/PAL) fps or greater

6.1.4 Video streaming shall be Motion JPEG with controllable frame rate and bandwidth

6.1.5 Image settings required;

6.1.5.1 Compression

6.1.5.2 Color

6.1.5.3 Rotation

6.1.5.4 Aspect ratio correction

6.1.5.5 Text and image overlay

6.1.5.6 Privacy mask

6.1.5.7 De-interlace filter

6.1.6 Required Security;

6.1.6.1 Password protection

6.1.6.2 IP address filtering

6.1.6.3 HTTPS encryption

6.1.6.4 IEEE 802.1X network access control

6.1.7 Required Protocols Supported;

IPv4/v6,HTTP,HTTPS, QoS layer 3 DiffServ,FTP,Bonjour, UPnP,SNMPv1/v2c/v3(MIB-II),DNS,DynDNS, TCP,UDP,ICMP,DHCP,ARP,SOCKS,

6.1.8 3MB Video buffer required pre and post alarm per channel

6.1.9 Video motion detection required

6.1.10 Minimum alarm triggers shall be intelligent video and external input

6.1.11 Alarm events actions shall include:

6.1.11.1 File upload via FTP

6.1.11.2 HTTP and email

6.1.11.3 Notification via email

6.1.11.4 HTTP and TCP

6.1.11.5 External output activation

6.1.12 Pan/Tilt/Zoom control:

6.1.12.1 min 20 presets/camera

6.1.12.2 guard tour capable

6.1.12.3 PTZ control queue

6.1.12.1 Shall support Windows compatible joysticks

6.1.13 Shall utilize ETRAX 100LX and ARTPEC-2 processors

6.1.14 Provide a min of 32 MB of RAM and 8 MB Flash

6.1.15 Power range 7-20V DC, max 8W

6.1.16 Minimum Connectors

6.1.16.1 Analog composite video NTSC/PAL auto-sensing:

6.1.16.1.1 Four (4) ea BNC inputs

6.1.16.1.2 RJ-45 10BASE-T/100BASE-TX

6.1.16.2 Terminal Block:

6.1.16.2.1 I/O terminal block for four configurable inputs/outputs

6.1.16.2.2 RS-485/ RS-422

6.1.16.2.3 D-sub for RS-232 port

6.1.17 Operating conditions

6.1.17.1 5 – 50 °C (41 – 122 °F)

6.1.17.2 Humidity 20 – 80% RH (non-condensing)

6.1.18 Required accessories

6.1.18.1 Power Supply

6.1.18.2 mounting and connector kits

6.1.18.3 Installation Guide

6.1.18.4 User's Manual

6.1.18.5 Axis Camera Station Five license Upgrade for Windows version of software.
6.1.18.6 Video Surveillance Joystick
6.1.18.7 Cables and cords or connectors
6.1.18.8 64 GB micro SD memory card (Sandisk Ultra plus)
6.1.19 Accepted model shall be AXIS P7214 or pre-approved equal.

6.2 Ethernet Pan/Tilt/Zoom Camera
6.2.1 Image sensor shall be ¼" ExView HAD progressive scan CCD
6.2.2 Lens f=3.4 – 119 mm, F1.4 – 4.2, autofocus, automatic day/night
Horizontal angle of view: 55.8° - 1.7°
6.2.3 Minimum illumination
Color: 0.5 lux at 30 IRE F1.4
B/W: 0.008 lux at 30 IRE F1.4
6.2.4 Shutter time 1/30000 s to 0.5 s (60 Hz), 1/30000 s to 1.5 s (50 Hz)
6.2.5 Pan/tilt/zoom:
E-flip, 100 preset positions
Pan: 360° endless, 0.05° – 450°/s
Tilt: 220°, 0.05° – 450°/s
35x optical zoom and 12x digital zoom, total 420x zoom
6.2.6 Pan/tilt/zoom functionalities:
Guard tour
Control queue
On-screen directional indicator
6.2.7 Video Compression shall be H.264 (MPEG-4 Part 10/AVC) Motion JPEG
6.2.8 Minimum Resolutions:
1920X1080
6.2.9 Frame Rate:
H.264: Up to 30/25 fps (60/50 Hz) in all resolutions
Motion JPEG: Up to 30/25 fps (60/50 Hz) in all resolutions
6.2.10 Video streaming:
Multiple, individually configurable streams in H.264 and Motion JPEG
Controllable frame rate and bandwidth VBR/CBR H.264
6.2.11 Image settings:
Wide dynamic range (WDR), electronic image stabilization (EIS), manual shutter time, compression, color, brightness, sharpness, white balance, exposure control, exposure zones, backlight compensation, fine tuning of behavior at low light, rotation, aspect ratio correction, text and image overlay, privacy mask, image freeze on PTZ
6.2.12 Security:
Password protection, IP address filtering, HTTPS encryption*, IEEE 802.1X network access control*, digest authentication, user access log
6.2.13 Supported protocols:
IPv4/v6, HTTP, HTTPS*, SSL/TLS*, QoS Layer 3 DiffServ, FTP, SMTP, Bonjour, UPnP, SNMPv1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS
6.2.14 56 MB Video buffer required pre and post alarm
6.2.15 Video motion detection and auto-tracking required
6.2.16 Minimum alarm triggers shall be intelligent video and external input
6.2.17 Alarm events actions shall include:
6.2.17.1 File upload via FTP
6.2.17.2 HTTP and email
6.2.17.3 Notification via email
6.2.17.4 HTTP and TCP
6.2.17.5 local storage
6.2.18 Enclosure shall include:
IP66- and NEMA 4X-rated metal casing (aluminum), acrylic (PMMA) clear dome, sunshield (PC/ASA)
6.2.19 Shall utilize ARTPEC-3 processor

6.2.20 Provide a min of 128 MB of RAM and 128 MB Flash
6.2.21 Power High Power over Ethernet (High PoE) IEEE 802.3at, max. 60 W
6.2.22 Connectors RJ-45 for 10BASE-T/100BASE-TX PoE IP66-rated RJ-45
connector kit shall be included
6.2.23 SD/SDHC memory card slot shall be provided with 4GB card included
6.2.24 Operating conditions:
-40 °C to 50 °C (-40 °F to 122 °F) Arctic Temperature Control enables camera start-up at temperatures as low as -40 °C (-40 °F)
6.2.25 Required accessories
6.2.25.1 Power Supply (POE Injector)
6.2.25.2 Pole mounting Bracket (Axis T91A67)
and connector kits 6.2.25.3 Installation Guide
6.2.25.4 User's Manual
6.2.25.5 Axis Camera Station Single license Upgrade for Windows version of software.
6.2.25.6 Video Surveillance Joystick
6.2.25.7 Cables and cords or connectors
6.2.25.8 clear and smoked dome cover
6.2.25.9 sunshield
6.2.25.10 installation and management tools software on CD or Flash Drive
6.2.25.11 recording software on CD or Flash Drive
6.2.25.12 64 GB micro SD memory card (Sandisk Ultra plus)
6.2.26 Accepted model shall be AXIS Q6045-E or pre-approved equal.

7. INTERCONNECT COMMUNICATIONS EQUIPMENT

7.1 Wireless Ethernet Interconnect radio

7.1.1 Description.

Ethernet radio for interconnect purposes shall be furnished and installed in the cabinet and at locations shown on the plans. Equipment shall be shall include all labor, equipment, and material required to install a Wireless Interconnect, Ethernet, Access Point, Remote, and/or Antenna at an intersection location to provide wireless traffic signal interconnection compatible with solid state pre-timed or actuated traffic signal control equipment and cabinet environments. This includes a wireless closed loop interconnect package, shelf mounted unit, processor (with radio modem, when appropriate), power supply, surge protection, antennas, mounting brackets, hardware assembly, fittings, cable, connectors, grounding, and other material required to complete the work.

7.1.2.System Requirements:

This specification covers the minimum technical requirements for a 5.8 GHz wireless broadband Ethernet system for ITS communications. The system shall consist of connectorized radios and/or radios with integrated panel antennas.

7.1.3 Functional Capabilities:

The system shall function as point-to-point or point-to-multipoint (backhaul), MESH node, repeater and hotspot radio, for a range of 60 miles (with L.O.S.) or greater.

7.1.3.1Radio Specifications:

7.1.3.1.1 The radio shall operate in a Dynamic Frequency Selection mode between multiple frequency bands from 5.2 GHz UNII to 5.8 GHz ISM non overlapping channels. 5MHz, 10MHz and 20MHz, and 40 MHz channels shall be available.

7.1.3.1.2 The system shall function as point-to-point or point-to-multipoint (backhaul), MESH node, repeater and hotspot radio, for a range of 60 miles (with L.O.S.) or greater. The system shall function as point-to-point or point-to-multipoint (backhaul), MESH node, repeater and hotspot radio, for a range of 60 miles (with L.O.S.) or greater. Each unit is software configurable as a master (AP), remote (SU), MESH node, hotspot, or repeater. It is not acceptable to have different units for each mode of operation.

7.1.3.1.3 The radio shall operate as E-Orthogonal Frequency Division Multiplexing (E-OFDM).

The radio shall operate with a WiMax proprietary protocol named EN-Stream/ EmaX protocol to provide up to 108Mbps

7.1.3.1.4 The radio shall also be capatible with 802.11a IEEE strandards

7.1.3.1.5 The radio shall utilize adaptive modulation to ensure connectivity in low signal environments.

7.1.3.1.6 The radio minimum receiver sensitivity must be -97 dBm.

7.1.3.1.7 The radio must have a minimum transmit output power of 600mW.

7.1.3.1.8 The remote power system shall accept input power of 120 – 240 VAC, 50 – 60 Hz. The remote power system shall output 18VDC with a maximum current of 1 amp.

7.1.3.1.9 The radio shall operate with a voltage of 18VDC with a typical current draw of 0.4amps. It shall be also be capable of receiving Power over Ethernet (POE) with adequate lightning and surge protection provided.

7.1.3.1.10 The unit shall operate from -40º C to +80º C with a maximum relative humidity of 95%, non con-condensing. It shall be rated for outdoor use per IP67.

7.1.3.1.11 All radios shall be equipped with advanced security features such as WPA2 encryption, RADIUS server authentication, and MAC address authentication.

7.1.3.1.12 As a minimum, each radio must contain the following networking features: STP (spanning tree protocol), DHCP server/ client, NTP, Firewall and NAT routing, QOS, VPN, VLAN, SNMP.

7.1.3.1.13 All mounting hardware for the radios and antennas, including Cat5e or better industrial outdoor rated cable shall be included as indicated on the plans.

7.1.3.2 Antennas:

7.1.3.2.1 The connectorized radio system shall be provided with external Omni, Sector or Panel antennas with a maximum gain of 23dBi. The antennas shall be provided with a N female connector. The antennas shall be available for pole or wall mounting. The connectorized radio shall be housed in a die cast aluminum housing not to exceed 8.5”W x 7”H x 2”D. The radio shall weigh no more than 3lbs and be IP67 weatherproof rated.

7.1.3.2.1 The radio system may also be provided with an integrated flat panel antenna with a 23dBi gain. The integrated antenna assembly shall include the flat panel antenna and radio housed in a UV stabilized plastic housing and attached to the flat panel antenna. The integrated flat panel must be a diamond shape. The antenna shall be made from die cast aluminum and arranged for pole or wall mount. The flat panel antenna assembly shall be 13”W x 13”H x 3”D and weigh no more than 5 lbs. The integrated unit shall be IP67 weatherproof rated.

7.1.3.3 Cable

All cable whether it is coaxial, category 5e or category 6 shall be in accordance with the manufacturer’s recommendations and shall be installed either from each antenna to the radio housed in the cabinet or from an intermediate enclosure. Routing of all cable shall be through existing and new conduits and poles; external installation will not be allowed. Refer to the manufacturer’s recommendations. It will be the Contractor’s responsibility to determine length of cable required but shall not exceed the radio manufacturer’s recommendations for proper operation.

7.1.4 Configuration:

The radio system shall be provided with Windows based software that allows for configuration and diagnostics of the radio system. The software package shall allow the operator to communicate with all similar radios in the system including 900Mhz, 2.4GHz, 4.9ghz ethernet radios and Serial data radios. There shall be a real time signal strength monitor to optimize antenna placement. It shall be possible to obtain real-time monitoring of signal strength, authentication of data, system uptime, data rate and channel selection. The software must also provide a real-time bandwidth measurement tool. A spectum analyzer feature must be present.

The software must be capable of generating automated reports of the wireless system health. This information must include: Signal Strength (dBm), Bandwidth Availability (Mbps), Noise Floor (dBm)

A Web browser interface must also be available to configure the radios.

7.1.5 Compliance:

The radio system shall comply with all applicable 802.11a IEEE industry networking standards, FCC and UL requirements.

7.1.6 Warranty:

The manufacturer shall guarantee that all material supplied shall be free from all defects in materials and workmanship for a period of THREE (3) year from date of shipment.

7.1.7 Software:

Any software required to provide full capability for the radio system supplied in this provision shall be included at no additional cost and be provided prior to signal turn on. It shall include software required for setup, configuration, management or troubleshooting.

Media shall be either Compact Disc (CD) or portable USB "flash" memory device.

7.1.8 Determination of Suitability

7.1.8.1 The radio supplier or its authorized representative shall verify by written certification that said radios are fully compatible with said traffic controller equipment; certification shall be prior to installation. All radios supplied shall be of the same type (manufacturer, model series, etc.).

7.1.8.2 Any manufacturer of traffic signal control equipment or controller cabinets to be supplied under these Special Provisions shall provide a field and factory demonstration of the equipment proposed to be supplied. The demonstration shall be of equipment that has operated satisfactorily in accordance with specifications for a minimum of 180 calendar days subsequent to final acceptance by the jurisdiction to which it was supplied. This equipment shall have been performing those functions proposed under this contract. The demonstration shall be to **two members of the City of Victorville Engineering Department designated by the City Traffic Engineer.** The two person review team will determine the suitability of the equipment and their report shall be the final authority for determination of suitability of the proposed equipment. All expenses incurred in providing these demonstrations shall be the responsibility of the manufacturer of the proposed equipment.

7.1.8.3 Ethernet Radios shall be ENCOM Energy 300Mbps Wireless Broadband System. Any departure Special Provisions shall require Determination of Suitability of the proposed alternate equipment in accordance with Sec. 8.16 of these Special Provisions **prior to award of contract**. Failure to achieve a Determination of Suitability for the proposed alternate equipment shall be considered cause for rejection of the project bid as non-responsive.

7.2 FIBER OPTIC CABLE

NOT REQUIRED FOR THIS PROJECT.

7.3 Ethernet Communication over copper wire.

7.3.1 A System based upon Ethernet Access Devices (EAD) and Copper Add-Drop Multiplexer (CADM) shall be furnished and installed in the cabinet and at locations shown on the plans. Equipment shall be Actelis ML130/ML628/ML688 with all related power supplies, communication isolators, and hardware necessary for the installation. All diagnostic features shall be enabled. Installation shall be in accordance with the manufacturer's requirements.

7.3.2 Interfaces

7.3.2.1 Ethernet

10/100 Base-T	4 ports	– Connector: RJ45, Auto-MDIX
100 Base-FX/1000	1 port (option)	- Connector SFP based, MSA compliant

7.3.2.2 High Speed Link (Bonded Copper Pairs)

Protocol	IEEE 802.3ah 2Base-TL
Sealing Current	48VDC/4mA nominal

7.3.2.3 Management (Out-of-Band)

10/100BaseT	- connector: RJ45, Auto-MDIX

7.3.3 LAN Protocols

Dynamic Bridging	IEEE 802.1
VLAN Tagging	IEEE 802.1Q
Double Tagging	Q-in-Q
MSTP, RSTP, STP	IEEE 802.1d
OAM/CFM	IEEE 802.3ah, 802.1ag

7.3.4 Management Protocols

SNMP	SNMP v1 and v2c
Command Line Interface	TL1
Remote Access	Telnet
Secure Access	SSH v2
Time Synchronization	SNTP v3
Web Access	HTTP
File Transfer	FTP, TFTP

7.3.5 Software applications

Any software required to setup, maintain, modify or monitor the equipment shall be provided prior to installation.

7.3.6 Environmental

Operating Temp	-40° to +65°
Storage Temp	-40° to +70°
Relative Humidity	Up to 95%, non-cond.

7.4 Hardened Ethernet Switch

7.4.1 A Hardened Ethernet switch shall be furnished and installed with the cabinet. The Equipment shall be:
Cisco IE3000-8TC Switch, 8 10/100 + 2 T/SFP
Cisco IEM-3000-4SM 4port SFP expansion module
Cisco PWR-IE50W-AC AC Power Module
Cisco 100Mbps Single Mode Rugged SFP- 6 each

It shall incude all related power supplies, communication isolators, and hardware necessary for the installation. Or Pre-approved equal. All diagnostic features shall be enabled and shall include Lan Base web development manager. Installation shall be in accordance with the manufacturer's requirements

7.4.2 Shall be NEMA TS-2 compliant

7.4.3 Shall be NEMA TS-2 & NTCIP Compliant for managed ITS data applications

7.4.4 Shall provide an embedded web server for setup and configuration.

7.4.5 Unit shall be compatible with Naztec Traffic signal controllers

7.4.6 Functional Hardware Features

Feature	Specifications
Configuration	Twelve 10/100 ports with two fixed 100BASE-FX multimode uplink ports or two fixed 100BASE-LX single-mode uplink ports
Operating Temperature	-40º to 60º C / -40º to 140º F
Relative Humidity	5%-95% non-condensing
Cooling	Passive (no fans)
Shock/Vibration	50 g 500 Hz Trapezoidal/MIL-STD-810
Dimensions (inches) hxdxw	3.75x5x8
Cabling	Front and Downward
Alarm Relays	2 normally closed
LED	Relay, Power (for each source), Port Status (similar to 2950)
Mounting Options	Din Rail (ports front or downwards) Rack Mounting Adapters
Power Transformer	Separate SKU Din Rail (110/220 AC)
Power	24 V DC (Optional Redundant Power)
Power Surge Protection	30%
Warranty	5 – year Limited Lifetime
Ports	8- 10/100 + 2- T/SFP (for single Mode Fiber)

7.4.6 Software and Performance Features

High Availability	IGMP Snooping Support 4,000 VLANS Broadcast Storm Control Rapid Spanning Tree Support
Quality of Service	4 service queues Weighted Round Robin Queuing Strict Priority Scheduling
Security	Security Access Control Lists (Layers 2-4) SNMP v3 Support
Performance Specifications	13.6 Gbps switching fabric Forwarding Rate up to 4.8Mpps Configurable up to 8,000 MAC addresses
Standards Supported	IEEE 802.1x Security Supporrt IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports IEEE 802.1D Spanning-Tree Protocol IEEE 802.1p CoS prioritization IEEE 802.1Q VLAN IEEE 802.3 10BASE-T specification IEEE 802.3u 100BASE-TX specification IEEE 802.3ab 1000BASE-T specification IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3ah Ethernet in the First Mile (EFM) RMON I and II standards SNMPv1, SNMPv2c, and SNMPv3
Compliance	CE Marking UL 60950 CSA 22.2/60950 TUV GS: CB Report to IEC 60950 UL 508 CSA 22.2/142 AS/NZS 3260 NOM UL 1604—Class I, Div 2 Group A, B, C, D CSA 22.2/213—Class 1, Div 2 Group A, B, C, D EN 50021—Class I, Zone 2 FCC Part 15 Class A ICES-003 Class A EN 55022: (CISPR22 Class A) EN 55024: (CISPR24) VCCI Class A AS/NZS CISPR 22 Class A VCCI Class 1 CNS 13438 BSMI Class A MIC Class A EN 61131-2 EN 55011 (CISPR 11) Class A

7.5 Traffic Signal Controller Data Transmission Modem

7.5.1 The External Traffic Signal Controller Data Transmission Modem shall be designed to operate as an FSK modem over existing interconnect cable that is not twisted or shielded. This unique feature includes the capability of rejecting the 60 Hz voltage that might be induced when operating on an active interconnect line.

7.5.2

Data Rate:	300 to 9600 Baud
Frequencies:	Mark-10,000 KHz Space-15,000 KHz
Timing:	CTS 10 +/-2ms CD 8 +/-2ms
Soft Carrier:	10 +/-2ms
Transmit Level:	10 dbm or less
Data Interface:	EIA RS-232Temperature:-
Temperature:	-40º C to +85º
Power:	120V AC +/-15%, typical 50 ma or less
LED Indicators:	TX, RX, RTS, CTS, CD

7.5.3 The Traffic Signal Controller Data Transmission Modem shall be Naztec model 9600A or Pre-approved equal.

8. UNINTERRUPTIBLE POWER SYSTEM

8.1 General Requirements

The Traffic UPS shall be a turnkey, true on-line, power conditioner and battery backup or uninterruptible power system (UPS) designed for transportation and traffic applications. The unit shall be capable of operating, up to its rated power level, in extreme environments with existing equipment on the street today including any and all signal heads (i.e., Incandescent, LED, Neon, etc.). The Traffic UPS shall be furnished and installed in conformance with the following specification.

8.2 Operation

8.2.1 The Traffic UPS shall be capable of producing standby and continuous AC outputs.

8.2.2 Suggested operating mode for respective outputs during power failure: Continuous output provided for signal controllers and modems; Standby output provided for signals in flash mode operation (optional delay timer available for short-term battery run under full cycling operation).

8.2.3 Up to the maximum rating, the Traffic UPS shall be capable of running any combination of signal heads, whether Incandescent, LED or Neon, by any manufacturer, regardless of power factor, without overdriving the poorer power factor LED heads which may cause early degradation, low luminosity or early signal failure.

8.2.4 Upon Loss of utility power the Traffic UPS shall insert battery power into the system via a supplied Power Interface Module (PIM). In case of UPS failure and/or battery depletion, the PIM will ensure that the UPS will drop out and, upon return of utility power, the traffic control system will default to normal operating mode.

8.2.5 The Power Interface Module shall enable removal and replacement of the Traffic UPS without shutting down the traffic control system (i.e. “hot swap” capability). Connectors shall be equipped with a “safety interlock” feature.

8.2.6 For 170 or “California” style cabinets, upon loss of power the Traffic UPS shall actuate the existing Flash Transfer Relays (FTRs) and Mercury Contactor (MC) to force the traffic control system in to Flash Mode operation.

8.2.7 Existing Flasher Modules and Flash Transfer Relays shall be utilized.

8.2.8 To facilitate emergency crews and police activities, the Traffic UPS shall be compatible with police panel functions (i.e. “Signals OFF” switch must kill power to the field wiring even when on UPS/Battery power).

8.2.9 The Traffic UPS shall not duplicate or take over flash operation or flash transfer relay functions.

8.2.10 The Traffic UPS shall be capable of providing continuous, (AC) power to selected devices such as signal controllers, modems, communications hubs, NTCIP adapters and video equipment.

8.3 Description

The Traffic UPS shall consist of three major components, the Electronics Module, the Power Interface Module, and the Battery System.

8.3.1 The Electronics Module shall consist of the following:

8.3.1.1 True sine wave, high frequency inverter utilizing IGBT technology.

8.3.1.2 3-stage, temperature compensated, battery charger.

8.3.1.3 For connection from the Electronics Module to the Power Interface Module and Battery System, dedicated harnesses shall be provided with quick-release, connectors and braided nylon sleeving over all conductors.

8.3.1.4 Local and remote control of UPS functions.

8.3.1.5 Local and remote communications capabilities and be capable of NTCIP and TCP/IP communications and a Spread Spectrum Radio modem.

8.3.1.6 Separate Power Interface Module (PIM) for inserting power safely and reliably.

8.4Mounting/Configuration

8.4.1 NEMA Style: mounting method shall be shelf-mount or wall mount.

8.4.2 External: A separate, stand-alone, pad-mounted, outdoor (NEMA 3R) enclosure shall be available should there be inadequate room in the signal cabinet or should the consulting/traffic engineer prefer independent, external mounting.

8.5 Battery System

8.5.1 The battery shall be comprised of extreme temperature deep cycle, AGM/VRLA (Absorbed Glass Mat/Valve Regulated Lead Acid) batteries.

8.5.2 The battery system shall consist of one or more strings (typically 4 or 6 batteries per string) of extreme temperature, deep cycle, AGM/CRLA (Absorbed Glass Mat/Valve Regulated Lead Acid) batteries such as Clary Outpost™ batteries or equivalent.

8.5.3 Batteries shall be certified to operate at extreme temperatures from -40°C to +74°C.

8.5.4 The batteries shall be provided with appropriate interconnect wiring and a corrosion-resistant mounting trays and/or brackets appropriate for the cabinet into which they will be installed.

8.5.5 The interconnect cable shall be protected with abrasion-resistant nylon sheathing.

8.5.6 The interconnect cable shall connect to the base module via a quick-release connector.

8.5.7 Battery construction shall include heavy-duty, inter-cell connections for low-impedance between cells, and heavy duty plates to withstand shock and vibration.

8.5.8 An optional lifting handle shall be available on most battery models.

8.6 Electrical Specifications

8.6.1 Input Specification

Nominal Input Voltage	120 VAC, Single Phase
Input Voltage Range	85 VAC to 140 VAC
Input Frequency	50 or 60 Hz (+/-5%)
Input Configuration	3 Wire (Hot, Neutral & Ground)
Input Current (Max. draw)	7.2 amps, Power-Factor Corrected
Input Protection	Input Fuse (12 amps)

8.6.2 Output Specification

Nominal Output Voltage	120 VAC, Single Phase
Power Rating	1kVA (1000VA/700W)
Output Voltage Regulation	+/-2% for 100% step load change and from High battery to Low battery condition
Output Frequency	50 or 60 Hz (+/-5%)
Output Configuration	Keyed, circular connectors and duplex receptacle.
Output Wave Form	True Sinewave
Overload Capability	110% for 10 minutes 200% for ½ second
Fault clearing	Current limit and automatic shutdown
Short circuit protection	Current limit and automatic shutdown
Efficiency	85% at full load
Load Power Factor	.7 lagging through unity to .7 leading

8.7 Physical Specifications

8.7.1 Dimensions:

Rack-mount: Width = 19", Depth = 12", Height = 7" (4U)

Shelf-mount: Width = 19", Depth = 12", Height = 3.5"

Wall-mount/Unistrut Rail mount: Width = 6.9", Depth = 9.5", Height 16"

Separate Power-Interface Module = Width = 6", Depth = 2.8", Height 9"

8.7.2 Weight: UPS: 20 lbs., Shipping weight: 25 lbs.

8.8 Environmental Specifications

8.8.1 The UPS shall meet or exceed NEMA temperature standards from -40°C to +74°C.

8.8.2 The UPS shall be certified and field proven to meet or exceed NEMA temperature standards. A Certification of compliance shall be made available upon request.

8.9 Battery Specifications

8.9.1 The battery system shall be certified and filed proven to meet or exceed NEMA temperature standards from -40°C to +74°C.

8.10 Communications, Controls & Diagnostics

8.10.1 Alarm Function Monitoring: The traffic UPS shall come standard with a DB-9F connector with open collectors (40V @ 20 mA) indicating;

8.10.2 Loss of Utility Power

8.10.3 Inverter Failure.

8.10.4 Low Battery.

8.10.5 An RS232 Interface shall be provided via a DB-9F connector allowing full, interactive, remote computer monitoring and control of the UPS functions.

8.10.6 A RJ45 port shall be supplied to connect to ethernet network

8.10.7 Front Panel controls: Power ON, Cold (DC) Start, Alarm Silence, Battery Test, Bypass Breaker, and DC/Battery Breaker.

8.10.8 Unit shall be provided with the optional SNMP/HTTP card that functions as an SNMP agent and includes an embedded HTTP server (web server) allowing the capability of monitoring and controlling the UPS system from a remote location utilizing a standard web browser.

8.10.9 All Software required to interface with the UPS system whether it is used for setup or upgrading firmware shall be provided prior to each signal turn-on. Media shall be either Compact disc or provided on "flash drive" USB memory device.

8.10.10 Central software for remote programming and configuration shall be provided at no additional cost.

8.10.11 Unit shall be equipped with a display screen and keypad on the front of the unit that can be programmed without the use of a laptop.

8.11 Reliability

8.11.1 Calculated MTBF is 100,000 hours based on component ratings.

8.11.2 When Bypass and Power Interface Module are included, system MTBF increases to 150,000 hours.

8.12 Options

8.12.1 Battery Tray to hold six (6) OP72A batteries, up to four (4) OP72B or OP72C batteries, and up to three (3) OP72D batteries. Tray is 19" wide for use in 170 type cabinets and mounts on standard RETMA rails.

8.12.2 Swing-out Battery Box, mounts on right rail inside back door of 170 type cabinets. Box is designed to hold six (6) OP72A batteries, up to four (4) OP72B or OP72C batteries, and up to three (3) OP72D batteries.

8.12.3 Adjustable Delay-timer to provide up to 10 hours of full cycling while on battery before switching to flash mode (only available where 100% low-power/LED signals and ped heads are used). Batteries must be sized properly to fully utilize this feature.

8.12.4 Service pedestal-mounting option.

8.12.5 One-shot ground pulse to trigger External Start upon return of AC power.

8.12.6 Dial-out modem for wireless or land line communication.

8.12.7 Enhanced battery charger provides accelerated charging capacity (contact factory for details and proper application).

8.13 Serviceability & Maintainability

8.13.1 MITR (Mean-Time to Replace or Repair)

8.13.2 Electronics: 15 minutes or less

8.13.3 Battery System: 15 minutes or less

8.14 Warranty

Standard warranty terms cover entire Traffic UPS including battery. Terms are one-year parts and labor with labor F.OB factory. Hot Swap programs shall be provided.

8.15 Determination of Suitability

8.15.1 Any manufacturer of traffic signal control equipment or controller cabinets to be supplied under these Special Provisions shall provide a field and factory demonstration of the equipment proposed to be supplied. The demonstration shall be of equipment that has operated satisfactorily in accordance with specifications for a minimum of 180 calendar days subsequent to final acceptance by the jurisdiction to which it was supplied. This equipment shall have been performing those functions proposed under this contract. The demonstration shall be to **two members of the City of Victorville Engineering Department designated by the City Traffic Engineer.** The two-person review team will determine the suitability of the equipment and their report shall be the final authority for determination of suitability of the proposed equipment. All expenses incurred in providing these demonstrations shall be the responsibility of the manufacturer of the proposed equipment.

8.15.2 Any departure from the equipment listed under Sec. 8.15.3 of these Special Provisions shall require Determination of Suitability in accordance with Sec. 8.15.1 of these Special Provisions prior to award of contract. Failure to achieve a Determination of Suitability for the proposed alternate equipment shall be considered cause for rejection of the project bid as non-responsive.

8.15.3 An acceptable system is the SP1250LX series Traffic UPS manufactured by Clary Corporation or Pre approved Equal.

8.16 Turn On

There shall be a factory trained individual representing the manufacturer present at signal turn on.

9. PEDESTRIAN REQUIREMENTS

9.1 PEDESTRIAN PUSH BUTTON

Pedestrian push buttons supplied under this contract shall be highly vandal resistant with essentially no moving parts and shall conform to the following specifications.

9.1.1 Button housing must be cast aluminum powder coated.

9.1.2 Button cap must be made of 316 stainless steel.

9.1.3 Switch must be solid state electronic switch rated for 300 million cycles with no moving plunger or moving electrical contacts.

9.1.4 Button must have LED to give indication of button being pushed.

9.1.5 Button must give a two toned beep indication of button being pushed (one tone for push, one tone for release).

9.1.6 Button must have built in surge protection.

9.1.7 Button must operate immediately after being completely immersed in water for 5 minutes.

9.1.8 Button must not be able to allow ice to form such that it would impede function of button or button cap.

9.1.9 All switch electronics must be sealed within the cast aluminum housing.

9.1.10 Total depth of button, from face of button cap to back of button terminal, must be less than 1.75 inches.

9.1.11 Eight pedestrian push buttons shall be provided for each signal location.

9.1.12 Pedestrian push Buttons shall be Polara Bulldog or pre-approved equal.

9.2 LED PEDESTRIAN COUNTDOWN MODULES

9.2.1 PURPOSE

The purpose of this specification is to provide the minimum performance requirements for the LED "walking person" and "hand" icon pedestrian signal modules with countdown (hereafter called module or modules). This specification is only for the nominal overall message-bearing surface of 406 x 457 mm (16 x 18 in). This specification is not intended to impose restrictions upon specific designs and materials that conform to the purpose and the intent of this specification. This specification refers to definitions and practices described in "Pedestrian Traffic Control Signal Indications" published in the *Equipment and Materials Standards of the Institute of Transportation Engineers*, (referred to in this document as "PTCSI") and in the Applicable Sections of Manual on Uniform Traffic Control Devices (MUTCD) 2003 Section 4E. This purchasing specification applies to modules purchased after the effective date of these specifications.

9.2.2 Physical and Mechanical Requirements

9.2.2.1 General

Modules designed as retrofit replacements for existing pedestrian signal indication lamps shall not require special tools for installation. Retrofit replacement modules shall fit into existing pedestrian signal housings built for the PTCSI sizes stated in Section 1 of the "walking person" and "hand" icon pedestrian signal indication Standard without modification to the housing.

Installation of a retrofit replacement module into an existing pedestrian signal housing shall only require the removal of the existing optical unit components, i.e., lens, lamp module, gaskets, and reflector; shall be weather tight and fit securely in the housing; and shall connect directly to existing electrical wiring.

9.2.2.2 The Module under physical and mechanical requirements

9.2.2.2.1 The retrofit module shall be capable of replacing the optical component of the pedestrian indication.

9.2.2.2.2 The LED module shall have a visual appearance similar to that of an incandescent lamp (ie: Smooth and non-pixilated).

9.2.2.2.3 The module lens shall not be a replaceable part. Screwed on lenses are not allowed. Only modules with internal mask shall be utilized. No external silk-screen shall be permitted.

9.2.2.2.4 The dividers inside the module that make up the icons and digits shall be black so as to eliminate sun phantom effect. When not illuminated with the sun shining into the module, the WALKING PERSON and UPRAISED HAND and COUNTDOWN DIGITS shall not be readily visible.

9.2.2.2.5 The countdown digits of the pedestrian signal module shall be located adjacent to the associated UPRAISED HAND (symbolizing DON'T WALK). When displaying a number "1" for both digits, the number "1" shall use the two segments furthest to the right. The digits shall remain on during the entire count down cycle. Flashing digits are not allowed.

9.2.2.2.6 The display of the number of remaining seconds shall begin only at the beginning of the pedestrian change interval. After the countdown displays zero, the display shall remain dark until the beginning of the next countdown.

9.2.2.2.7 The walking person, hand icons and countdown digits (16"x18" size only) shall be incandescent looking. The configurations of the walking person icon, hand icon and numbers icons are illustrated in Figures 1, 2 (per PTCSI Part 2 Specification) and Figure 3 respectively.

Figure 1

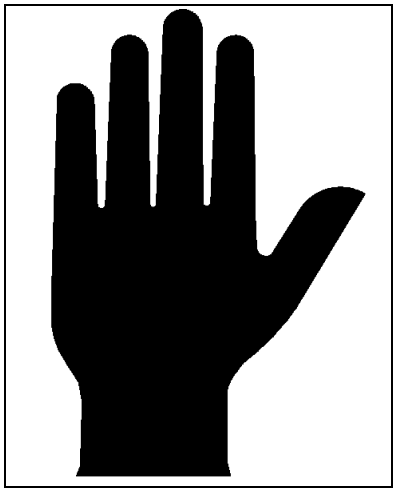


Figure 2

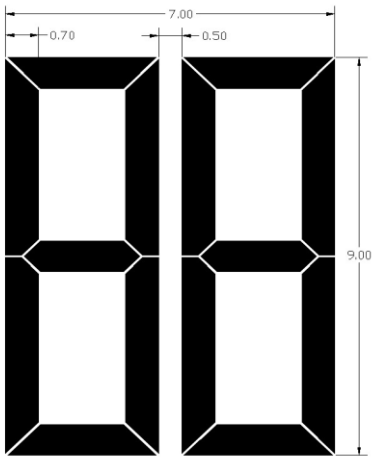


Figure 3

Dimensions for Figures 1, 2 and 3

For each nominal message bearing surface (module) size, use the corresponding minimum H (height) and W (width) measurements:

Module Size	Icon Height	Icon Width	Countdown Height	Countdown Width	Countdown Segment Width
406 x 457 mm (16 x 18 in)	297 mm 11 in	178 mm 7 in	229 mm 9 in	178 mm 7 in	17.78 mm 0.7 in

Note: The units shall not have any external attachments, dip switches, toggle switches or options that will allow the mode to be changed from counting the clearance cycle, to the full walk/don't walk cycle or any other modification to the icons or digits.

9.2.3 **Environmental Requirements**

9.2.3.2 All exposed components of a module shall be suitable for prolonged exposure to the environment, without appreciable degradation that would interfere with function or appearance. As a minimum, selected materials shall be rated for service for a period of a minimum of 60 months in a south-facing Arizona Desert installation.

9.2.3.3 The module shall be rated for use in the ambient operating temperature range, measured at the exposed rear of the module, of -40°C to +74°C. (-40°F to +165°F)

9.2.3.3 A module shall be protected against dust and moisture intrusion, including rain and blowing rain. Shall be sealed and meet MIL-STD-810F Procedure I, Rain & Blowing Rain specifications.

9.2.3.4 The module lens shall not crack, craze or yellow due to solar UV irradiation typical for a south-facing California Desert installation after a minimum of 60 months in service.

9.2.4 **Construction**

9.2.4.1 To prevent water seepage between the back cover and the electrical wires, or between the copper and insulation of the wires, the electrical wires shall not penetrate the LED module housing. Connection shall be made by use of an overmolded connector.

9.2.4.2 The module shall be a single, self-contained device, not requiring on-site assembly for installation into an existing pedestrian signal housing. The power supply shall be designed to fit and mount inside the pedestrian signal module.

9.2.4.3 The assembly and manufacturing process for the module shall be designed to assure all internal LED and electronic components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

9.2.5 Materials

9.2.5.1 Materials used for the lens and LED module construction shall conform to ASTM specifications where applicable.

9.2.5.2 Enclosures containing the power supply and electronic components of the LED module shall be made of UL94 flame retardant materials. The lens of the LED module is excluded from this requirement.

9.2.5.3 The front window shall be a transparent polycarbonate material with internal masking to prevent the icons and digits from being visible when not in operation. External masking or silk-screen technology shall not be permitted. When not illuminated, the Walking Person, Hand and Countdown Digits shall not be readily visible.

9.2.6 Module Identification

9.2.6.1 Each module shall be identified on the backside with the manufacturer's name, model, serial number and operating characteristics of each symbol. The operating characteristics identified shall include the nominal operating voltage and stabilized power consumption, in watts and Volt-Amperes.

9.2.6.2 Modules conforming to this specification (WALKING PERSON, UPRAISED HAND only), may have the following statement on an attached label: "Manufactured in Conformance with the ITE Pedestrian Traffic Control Signal Indications - Part 2: Light Emitting Diode (LED) Pedestrian Signal Modules".

9.2.3.0 PHOTOMETRIC REQUIREMENTS

9.2.3.1 Luminance, Uniformity & Distribution

9.2.3.1.1 For a minimum period of 60 months, the maintained minimum luminance values for the modules under the operating conditions defined in Sections 2.3.1 and 4.2.1, when measured normal to the plane of the icon surface, shall not be less than:

• Walking person: 2,200 cd/m^2;
• Hand: 1,400 cd/m^2.
• Countdown digits: 1,400 cd/m^2;

The luminance of the emitting surface, measured at angles from the normal of the surface, may decrease linearly to a value of 50% of the values listed above at an angle of 15 degrees.

The light output requirements in this specification apply to pedestrian signal heads without any visors, hooded or louvered (egg-crate).

9.2.3.1.2 The LED module shall have a visual appearance similar to that of an incandescent lamp (ie: Smooth and non-pixilated).

9.2.3.1.3 Maximum permissible luminance: When operated within the temperature range specified in Section 2.3.2, the actual luminance for a module shall not exceed three times the required peak value of the minimum maintained luminance.

9.2.3.1.4 Luminance uniformity: The uniformity of the signal output across the emitting section of the module lens (i.e. the hand, person or countdown icon) shall not exceed a ratio of 5 to 1 between the maximum and minimum luminance values (cd/m^2).

9.2.3.2 Chromaticity

9.2.3.2.1 The standard colors for the LED Pedestrian Signal Module shall be White for the walking person and Portland Orange for the hand icon and the countdown digits. The colors for these icons shall conform to the following color regions, based on the 1931 CIE chromaticity diagram:

Walking Person —White:
Blue boundary: $x = 0.280$.
1st Green boundary: $0.280 \le x < 0.400$
$y = 0.7917 \cdot x + 0.0983$.
2nd Green boundary: $0.400 \le x < 0.450$
$y = 0.4600 \cdot x + 0.2310$.

Yellow boundary: $x = 0.450$
1st Purple boundary: $0.450 \le x < 0.400$
$y = 0.4600 \cdot x + 0.1810$.
2nd Purple boundary: $0.400 \le x < 0.280$
$y = 0.7917 \cdot x + 0.0483$.

White		
Point	x	y
1	0.280	0.320
2	0.400	0.415
3	0.450	0.438
4	0.450	0.388
5	0.400	0.365
6	0.280	0.270

Hand and Countdown Digits—Portland Orange:
Yellow boundary: $y = 0.390$
White boundary: $0.600 \le x \le 0.659$
$y = 0.990 - x$

Red boundary: $y = 0.331$.

Portland Orange		
Point	X	Y
1	0.609	0.390
2	0.600	0.390
3	0.659	0.331
4	0.669	0.331

9.2.3.2.2 Color Uniformity:

Walking Person—White: $\sqrt{(\Delta x^2)+(\Delta y^2)} \leq 0.04$

where Δx and Δy are the differences in the chromaticity coordinates of the measured colors to the coordinates of the average color, using the CIE 1931 Chromaticity Diagram and a 2 degree Standard Observer.

Hand and Countdown Digits—Portland Orange:
The dominant wavelength for any individual color measurement of a portion of the emitting surface of a module shall be within ±3nm of the dominant wavelength for the average color measurement of the emitting surface as a whole.

9.2.4.0 ELECTRICAL

9.2.4.1 General

All wiring and terminal blocks shall meet the requirements of Section 13.02 of the VTCSH Standard. Maximum of three secured, color coded, 1 meter (39 in) long 600 V, 16 AWG minimum, jacketed wires, conforming to the National Electrical Code, rated for service at +105°C, are to be provided for electrical connection. The conductors shall be color coded with orange for the hand, blue for the walking person and white as the common lead.

9.2.4.2 Voltage

9.2.4.2.1 LED modules shall operate from a 60 ± 3 Hertz ac line power over a voltage range from 80 to 135 VAC RMS.

9.2.4.2.2 Nominal operating voltage for all measurements shall be 120 ± 3 VAC RMS.

9.2.4.2.3 Fluctuations in line voltage over the range of 80 to 135 VAC RMS shall not affect luminous intensity by more than ± 10 %.

9.2.4.2.4 Catastrophic failure of one LED light source in Man & Hand icons shall not result in the loss of more than the light from that one LED.

9.2.4.2.5 To prevent the appearance of flicker, the module circuitry shall drive the LEDs at frequencies greater than 100 Hz when modulated, or at DC, over the voltage range specified in Section 4.2.1.

9.2.4.2.6 Low Voltage Turn Off: There should be no illumination of the module when the applied voltage is less than 35 VAC RMS. To test for this condition, each icon must first be fully illuminated at the nominal operating voltage. The applied voltage shall then be reduced to the point where there is no illumination. This point must be greater than 35 VAC RMS.

9.2.4.2.7 Turn-ON and Turn-OFF Time: A module shall reach 90% of full illumination (turn-ON) within 75 msec of the application of the nominal operating voltage. The signal shall cease emitting visible illumination (turn-OFF) within 75 msec of the removal of the nominal operating voltage.

9.2.4.2.8 Default Condition: For abnormal conditions when nominal voltage is applied to the unit across the two-phase wires (rather than being applied to the phase wire and the neutral wire) the pedestrian signal unit shall default to the hand symbol.

9.2.4.2.9 Icon Power Supplies: LED pedestrian countdown modules shall have two separate power supplies for powering the Walking Person and Upraised Hand icons. The circuitry shall be unrelated to power the LED Walking Person icon and the LED Upraised Hand icon, in order to virtually eliminate the risk of displaying the wrong icon

9.2.4.3 Transient Voltage Protection

The on-board circuitry of a module shall include voltage surge protection:

- To withstand high-repetition noise transients and low-repetition high-energy transients as specified in NEMA Standard TS-2 2003; Section 2.1.8
- Section 8.2 IEC 1000-4-5 & Section 6.1.2 ANSI/IEEE C62.41.2-2002, 3kV, 2 ohm
- Section 8.0 IEC 1000-4-12 & Section 6.1.1 ANSI/IEEE C62.41.2-2002, 6kV, 30 ohm

9.2.4.4 Electronic Noise

The LED signal and associated on-board circuitry shall meet the requirements of the Federal Communications Commission (FCC) Title 47, Subpart B, Section 15 regulations concerning the emission of electronic noise by Class A digital devices.

9.2.4.5 Power Factor (PF) and AC Harmonics

9.2.4.5.1 The modules shall provide a power factor of 0.90 or greater when operated at nominal operating voltage, and 25ºC (77ºF).

9.2.4.5.2 Total harmonic distortion induced into an AC power line by the module, operated at nominal operating voltage, and at 25ºC (77ºF) shall not exceed 20%.

9.2.4.6 Controller assembly Compatibility

9.2.4.6.1 The current draw shall be sufficient to ensure compatibility and proper triggering and operation of load current switches and conflict monitors in signal controller units.

9.2.4.6.2 Off State Voltage Decay: When the module is switched from the On state to the Off state the terminal voltage shall decay to a value less than 10 VAC RMS in less than 100 milliseconds when driven by a maximum allowed load switch leakage current of 10 milliamps peak (7.1 milliamps AC)

9.2.4.7 Constant Current Drive

The countdown digits shall be driven by constant current to improve LED efficiency and lifespan.

9.2.4.8 Power Consumption

Maximum power consumption requirements for the modules are as follows:

	25°C
"Hand"	11.0 Watts
“Walking Person”	8.0 Watts
"Count-Down Display"	6.0 Watts (when display shows “88”)

9.2.5 MODULE FUNCTIONS

9.2.5.1 Cycle

The module shall operate in one mode: *Clearance Cycle Countdown Mode Only.* The module shall start counting when the flashing don't walk turns on and will countdown to "0" and turn off when the steady "Don't Walk" signal turns on. The m*odule shall not have user accessible switches or controls for the purpose of modifying the cycle, icons or digits.*

9.2.5.2 Learning Cycle

At power on, the module enters a single automatic learning cycle. During the automatic learning cycle, the countdown display shall remain dark.

9.2.5.3 Cycle Modification

The unit shall re-program itself if it detects any increase or decrease of Pedestrian Timing. The digits shall go blank once a change is detected and then take one complete pedestrian cycle (with no counter during this cycle) to adjust its buffer timer.

9.2.5.4 Recycling

The module shall allow for consecutive cycles without displaying the steady Hand icon ("Don't Walk").

9.2.5.5 Pre-Emption

The module shall recognize preemption events and temporarily modify the crossing cycle accordingly.

- If the controller preempts during the walking man, the countdown shall follow the controller's directions and shall adjust from walking man to flashing hand. It shall start to count down during the flashing hand.
- If the controller preempts during the flashing hand, the countdown shall continue to count down without interruption.

The next cycle, following the preemption event, shall use the correct, initially programmed values. This specification is worded such that the flashing don't walk time is not modified.

9.2.5.6 "Don't Walk" Steady

If the controller output displays Don't Walk steady condition or if both the hand /person go dark and the unit has not arrived to zero, the unit suspends any timing and the digits shall go dark.

9.2.5.7 Power Outage

The digits will go dark for one pedestrian cycle after loss of power of more than 2.0 seconds.

9.2.5.8 Digit Operation

The digits shall remain continuously lit during the clearance cycle and shall not flash in conjunction with the Hand/Don't Walk icon.

9.2.6.0 QUALITY ASSURANCE

9.2.6.1 General

Unless otherwise specified all of the test will be conducted at an ambient temperature of 25°C and at the nominal operating voltage of 120 VAC RMS.

9.2.6.1.1 The modules shall be manufactured in accordance with a vendor quality assurance (QA) program.

9.2.6.1.2 QA process and test result documentation shall be kept on file for a minimum period of seven years

9.2.6.2 Conformance

The module designs not satisfying design qualification testing and the production quality assurance testing performance requirements shall not be labeled, advertised, or sold as conforming to this specification.

9.2.6.3 Production Tests & Inspections

All lamps manufactured shall be affixed with an Intertek ETL Verified label (or other 3rd Party "Nationally Recognized Testing Laboratory/NRTL") to demonstrate compliance to Section 6.3 (Production Tests & Inspections) of the latest ITE PTCSI Pedestrian specification, dated March 19,

2004.

9.2.6.3.1 Production Test Requirement: All new LED modules tendered for sale shall undergo the following Production Test and Inspection prior to shipment. Failure of a module to meet requirements of these Production Test and Inspection shall be cause for rejection. Test results shall be maintained for a period of 5 years following the production of the last production unit.

9.2.6.3.2 Luminous Intensity: All LED modules shall be tested for maintained minimum luminous intensity. A single point measurement with a correlation to the intensity requirements referred to in Section 3.0 may be used. The LED module shall be operated at nominal operating voltage and at an ambient temperature of 25°C (77°F).

9.2.6.3.3 Power Factor: All LED modules shall be tested for power factor per the requirements of Section 4.6.1. A commercially available power factor meter may be used to perform this measurement.

9.2.6.3.4 Current: All LED modules shall be measured for current flow in Amperes. The measured current values shall be compared against those resulting from design qualification measurements in Section 5.4.6.1. Measured current values in excess of 120% of the design qualification current values shall be cause for rejection.

9.2.6.3.5 Visual Inspection: All LED modules shall be visually inspected for any exterior physical damage or assembly anomalies.

9.2.6.4 Design Qualification Testing

9.2.6.4.1 Design Qualification testing shall be performed on new module designs, and when a major design change has been implemented on an existing design.

9.2.6.4.2 High Temperature High Humidity (HTHH): 1000 hours at +60°C (+140°F), 90% Relative Humidity with cycling starting at 30 down to 0. This will ensure that each symbol is properly tested.

9.2.6.4.3 Unless otherwise specified, all of the tests shall be conducted on the same set of randomly selected modules, hereafter called the sample set, at an ambient temperature of 25°C and at the nominal operating voltage of 120 VAC RMS.

9.2.6.4.4 Testing shall be performed once every 5 years or when the module design or LED technology has been changed. The module manufacturer shall retain test data for a minimum period of 7 years and for a period of at least 5 years beyond the last date of manufacture of that model type.

9.2.6.4.5 Conditioning: The module shall be energized for a minimum of 24 hours in an ambient temperature of +60°C (+140°F), 0% Relative Humidity with cycling starting at 99 down to 0. This will ensure that each symbol is properly conditioned.

9.2.6.4.6 Mechanical Vibration: Mechanical vibration testing shall be performed per MIL-STD-883, Test Method 2007.

9.2.6.4.7 Temperature Cycling: Temperature cycling shall be performed per MIL-STD-883, Test method 1010. The temperature range shall include the full ambient operating temperature range specified in Section 2.3.2.

9.2.6.4.8 Moisture Resistance: Moisture resistance testing shall be performed per MIL-STD-810F, Test Method 506.4, Procedure I, Rain and Blowing Rain. The test shall be conducted on stand-alone modules, without a protective housing. The modules shall be vertically oriented, such that the lens is directed towards the wind source when at a zero rotation angle. The modules shall be energized throughout the test. The water shall be at 25° ± 5°C (77° ± 9°F). The wind velocity shall be 80 km/hr (50 mph).

9.2.7.0 WARRANTY AND QUANTITY

Manufacturers will provide the following warranty provisions. Replacement or repair of an LED signal module that fails to function as intended due to workmanship or material defects within the first 5 years (60 months) from the date of delivery. Eight units shall be required for each signal intersection and one additional spare unit.

9.3 ACCESSIBLE PEDESTRIAN SIGNAL SYSTEM

General

9.3.1 Summary

The goal of these specifications for installing accessible pedestrian signals (APS). Is to comply with the California MUTCD and American with Disabilities Act (ADA) and to provide pedestrians with disabilities additional accommodations.

9.3.2 Definitions

accessible pedestrian signal: Accessible pedestrian signal as defined in the California MUTCD.

accessible walk indication: Activated audible and vibrotactile action during the walk interval.

ambient sound level: Background sound level in dB at a given location.

ambient sound sensing microphone: Microphone that measures the ambient sound level in dB and automatically adjusts the APS speaker's volume.

APS assembly: Assembly that includes a pushbutton to actuate the APS components.

audible speech walk message: Audible prerecorded message that communicates to pedestrians which street has the walk interval.

programming mechanism: Device to program the APS' operation.

pushbutton information message: Pushbutton information message as defined in the California MUTCD.

pushbutton locator tone: Pushbutton locator tone as defined in the California MUTCD.

vibrotactile pedestrian device: Vibrotactile pedestrian device as defined in the California MUTCD.

9.3.3 Submittals

Before shipping the APS units to the job site, submit the units with the following to The City of Victorville Signal Maintenance Department:

1. Delivery form including Contract number and your contact information

2. Manufacturer's name

3. Model, lot, and serial numbers

4. Month and year of manufacture

5. Wiring diagram

6. Product data

7. Programming mechanism if not integral to the APS

Submit two copies of APS user and operator manuals for each signalized location as informational submittals. Each manual must have a master item index that includes:

1. Descriptions of the APS and its associated equipment and cables
2. Illustrative block diagrams
3. Manufacturer's contact information
4. Technical data specifications
5. Parts list, descriptions, and settings
6. Fault diagnostic and repair procedures
7. Preventative maintenance procedures for maintaining APS performance parameters

Submit the manufacturer's warranty documentation as an informational submittal before installing the APS.

Submit a record of completed field tests, the APS' final configuration, audible sound level and threshold, and a list of all parameter settings.

9.3.4 Quality Control and Assurance

(a) General

The APS must be compatible with the Nema controller, R and 332 cabinet assembly.
The power to the APS must be connected to the pedestrian signal's terminal blocks.

(b) Functional Testing

Perform 2 field tests on the APS in Victorville CA.:
(1) when traffic is noisy during peak traffic hours and (2) when traffic is quiet during off-peak hours. Notify the Engineer 15 days before testing the APS.

(c) Warranty

The APS must have a 5-year manufacturer's warranty against any defects or failures. The 5-year warranty period starts at Contract acceptance. Deliver a replacement within 10 days after you receive notification of a failed APS. The City does not pay for the replacement. Deliver the replacement to the City of Victorville Traffic Signal Maintenance Shop at:
City of Victorville
14473 McArt Rd
Victorville, CA 92391

(d) Training

Provide a minimum of 8 hours of training by a certified manufacturer's representative for up to 5 Department employees selected by the Engineer. The training must include instruction in installing, programming, adjusting, calibrating, and maintaining the APS.
Furnish materials and equipment for the training.

9.3.5 Materials

The housing for the APS assembly must be made of corrosion-resistant material. Theft proof bolts used for mounting the APS housing to the standard must be stainless steel with a chromium content of 17 percent and a nickel content of 8 percent.
The color of metallic housing must match color no. 33538 of FED-STD-595.
The color of plastic housing must match color no. 17038, 27038, or 37038 of FED-STD-595.
The APS assembly must be rainproof and shockproof in any weather condition.

The APS assembly must include:

1. Pushbutton actuator with a minimum diameter of 2 inches. If a mechanical switch is used, it must have:
    - 1.1. Operating force of 3.5 lb
    - 1.2. Maximum pretravel of 5/64 inch
    - 1.3. Minimum overtravel of 1/32 inch
    - 1.4. Differential travel from 0.002 to 0.04 inch
2. Vibrotactile device on the pushbutton or on the arrow.
3. Enclosure with an ambient-sound-level-sensing microphone and weatherproof speaker.

The enclosure must:

3.1 Weigh less than 7 lb.

3.2 Measure less than 16 by 6 by 5 inches.

3.3 Fit the Signal and Lighting and Type 1 standards or standard pedestrian push button posts.

3.4 Have a wiring hole with a diameter not exceeding 1-1/8 inches.

3.5 Be attached to the pole with 2 screws with a diameter from 1/4 to 3/8 inch suitable for use in tapped holes. The clear space between any 2 holes in the post must be at least twice the diameter of the larger hole.

3.6 Be delivered complete with mounting assembly compatible with a pedestrian push button post.

4. Pushbutton sign.

The APS speakers and electronic equipment must be installed inside the APS assembly's enclosure. The speaker grills must be located on the surface of the enclosure.
Speakers must not interfere with the housing or its mounting hardware.

The APS must:

1. Include a mechanism for enabling and disabling its operation both at the cabinet and remotely.
2. Have electronic switches, a potentiometer, or a handheld device for controlling and programming the volume level and messaging. Deliver any handheld programming device to the Engineer.
3. Provide information using:
   3.1 Audible speech message that plays when the pushbutton is actuated. The message must include the name of the street to be crossed. The APS must have at least 5 audible message options. The Engineer selects the message. The message must be factory recorded by the manufacture and be delivered on a USB flash storage device to the City of Victorville and also must be maintained by the factory on file for a minimum of 5 years. The message must have a percussive tone consisting of multiple frequencies with a dominant component of 880 Hz. If the tone is selected as the message, it must repeat 8 to 10 ticks per second.
   3.2. Pushbutton locator tone that clicks or beeps. The pushbutton must produce the locator tone at an interval of 1 tone per second. Each tone must have a maximum duration of 0.15 second. The tone volume must adjust in response to the ambient sound level and be audible up to 12 feet from the pushbutton or to the building line, whichever is less.
4. Provide a failsafe mode in case of a failure of any component.
5. Have a pushbutton that when actuated activates the pedestrian walk signal's timing during an APS Failure or provides recall for the phase affected.
6. Provide information using:
   6.1. Audible speech walk message. The message must be activated from the beginning of the walk interval and repeated for its duration. An example of the message is "Ameethyst. Walk sign is on to cross Amethyst."
   6.2. Pushbutton information message that provides the name of the street to be crossed. The message must play when the pushbutton is actuated. An example of the message is "Wait to cross Amethyst at Hook. Wait."
7. Have a functional pushbutton that activates the pedestrian walk signal whenever actuated, even if the audible speech walk message, the pushbutton information message, the pushbutton locator tone, and the vibrating surface features are disabled.
8. Operate utilizing a two wire system such that a standard push button could be used in place of APS system.
9. Communicate utilizing Ethernet. System shall be able to be upload and download statistics and settings utilizing standard Ethernet connection.
   9.1 All software available for APS system shall be provided on CD or USB Flash Drive.
10. Shall have a magnetic vibration behind the push button.
11. Be able to be programmed without the use of a lap top note book computer.
12. Be equipped with a polymer dome speaker, paper will not be allowed.
13. Activate a Pre-emption recording upon activation from controller or cabinet input.

9.3.6 Construction

Arrange to have a manufacturer's representative at the job site when the APS is installed, modified, connected, or reconnected. The APS must not interfere with the controller assembly, the signal installation on signal standards, the pedestrian signal heads, or the terminal compartment blocks. The APS electronic control equipment must reside inside the APS assembly and the standard pedestrian signal head.

The manufacturer is responsible for the compatibility of the components and for making the necessary calibration adjustments to deliver the performance specified. Furnish the equipment and hardware, and then set up, calibrate, and verify the performance of the APS. Point arrows on the pushbutton signs in the same direction as the corresponding crosswalk. Attach the sign to the APS assembly.

9.3.7 Determination of Suitability

Any manufacturer of an accessible pedestrian signal system to be supplied under these Special Provisions shall provide a field demonstration and factory acceptance test of the equipment proposed to be supplied. The demonstration shall be of equipment that has operated satisfactorily in accordance with specifications for a minimum of 180 calendar days subsequent to final acceptance by the jurisdiction to which it was supplied. This equipment shall have been performing those functions proposed under this contract. The demonstration shall be to two members of the City of Victorville Engineering Department designated by the City Traffic Engineer. The two person review team will determine the suitability of the equipment and their report shall be the final authority for determination of suitability of the proposed equipment. All expenses incurred in providing these demonstrations shall be the responsibility of the manufacturer of the proposed equipment.

10. LIGHT EMITTING DIODE (LED) LUMINAIRE (Mast Arm Mounted)

10.1 Specification

This specification is for the purchase of light emitting diode (LED) highway lighting luminaires (herein referred to as luminaires) mast-arm applications. This includes general roadway lighting luminaires for intersection and freeways as well as luminaires for underpasses, bridges, and parking lots. All devices shall meet the general specifications of the Transportation Electrical Equipment Specifications (TEES), Chapter 1--General Specifications, Section 86 of the Standard Specifications as well as the following specification. In case of conflict, this specification shall govern over the TEES, Chapter 1

10.2 General Requirements

10.2.1 Each luminaire shall consist of an assembly that utilizes LEDs as the light source. In addition, a complete luminaire shall consist of a housing, LED array, and electronic driver (power supply).

10.2.2 Each luminaire shall be rated for a minimum operational life of 63,000 hours.

10.2.2.1 Each luminaire will operate at an average operating time of 11.5 hours per night.

10. 2.2.2 Each luminaire is expected to have a minimum operational life of 180 months (15 years).

10.2.3 Each luminaire shall be designed to operate at an average nighttime operating temperature of 70°F.

10.2.3.1 The operating temperature range shall be -40°F to +130°F.

10.2.3.2 Each luminaire is expected to operate above 100°F, but not expected to comply with photometric requirements.

10. 2.3.3 Some parameters and tests (such as LM-79 and LM-80) shall be conducted at different ambient temperatures.

10.2.4 Each luminaire shall meet all parameter of this specification throughout the minimum operational life when operated at the average nighttime operating temperature.

10.2.5 Each luminaire shall be defined by the application (additional applications may be added as needed)

Application	Typically Replaces
Roadway 1	200 Watt HPS mounted at 34 ft
Roadway 2	310 Watt HPS mounted at 40 ft.
Roadway 3	310 Watt HPS mounted at 40 ft. with house/back side control
Roadway 4	400 Watt HPS mounted at 40 ft.

10.2.6 The individual LEDs shall be connected such that a catastrophic loss or the failure of one LED will not result in the loss of the entire luminaire.

10.2.7 Each luminaire shall be listed with Underwriters Laboratory, Inc. under UL 1598 for luminaires in wet locations, or an equivalent standard from a recognized testing laboratory.

10.3 Technical Requirements

10.3.1 Electrical

10. 3.1.1 Power Consumption Maximum power consumption allowed for the luminaire shall be (by application).

Application	Max Wattage
Roadway 1	165
Roadway 2	235
Roadway 3	235
Roadway 4	300

10.3.1.2 Operation Voltage

10.3.1.2.1 The luminaire shall operate from a 60 HZ ±3 HZ AC power source. The fluctuations of line voltage shall have no visible effect on the luminous output.

10.3.1.2.2 The operating voltage may range from 120 VAC to 480 VAC. The luminaire may operate over the entire voltage range or the voltage range may be selected from the two following options.

10.3.1.2.3 The luminaire shall operate over a minimum voltage range of 95 VAC to 277 VAC. The typical operating voltages for this option are 120 VAC, 240 VAC.

10.3.1.2.4 The luminaire shall operate over a minimum voltage range of 347 VAC to 480 VAC. The typical operating voltage for this option is 480 VAC.

10.3.1.3 Power Factor The luminaire shall have a power factor of 0.90 or greater.

10. 3.1.4 THD Total harmonic distortion (current and voltage) induced into an AC power line by a luminaire shall not exceed 20 percent.

10.3.1.5 Surge Suppression The luminaire on-board circuitry shall include surge protection devices (SPD) to withstand high repetition noise transients as a result of utility line switching, nearby lightning strikes, and other interference.

10. 3.1.5.1 The SPD shall protect the luminaire from damage and failure for transient voltages and currents as defined in ANSI/IEEE C64.41.2 (Tables 1 and 4) for Location Category C-High.

10.3.1.5.2 SPD shall conform to UL 1449, or UL 1283, depending of the components used in the design.

10.3.1.5.3 SPD performance shall be tested per the procedures in ANSI/IEEE C62.45 based on ANSI/IEEE C62.41.2 definitions for standard and optional waveforms for Location Category C-High.

10.3.1.6 Operational Performance The LED circuitry shall prevent perceptible flicker to the unaided eye over the voltage range specified above.

10. 3.1.7 Compatibility The luminaire shall be operationally compatible with currently used lighting control systems and photoelectric controls as detail in Standard Specification 86- 6.07 (2006 Version).

10.3.1.8 RF Interference The luminaires and associated on-board circuitry shall meet Class A emission limits referred in Federal Communications Commission (FCC) Title 47, Subpart B, Section 15 regulations concerning the emission of electronic noise.

10.3.2 Photometric Requirements

10.3.2.1 Illuminance

10.3.2.1.1 The minimum maintained illuminance shall be as required in the table below, and be measured as a point.

Application	Mounting Height (ft)	Minimum Maintained Illuminance (fc)	Light Pattern Figure (isofootcandle curve)
Roadway 1	34	0.15	1
Roadway 2	40	0.2	1
Roadway 3	40	0.2	2
Roadway 4	40	0.2	3

10.3.2.1.2 The L70 of the luminaire shall be at least the minimum number of hours as specified in Section 2.2 or greater.

10.3.2.1.3 The measurements shall be calibrated to standard photopic calibrations.

10.3.2.2 Light Color/Quality.

10.3.2.2.1 The luminaire shall have a correlated color temperature (CCT) range of 3,500K to 6,500K.

10.3.2.2.2 The color rendition index (CRI) shall be 65 or greater.

10.3.2.3 Cut-Off Requirements

10.3.2.3.1 The luminaire shall not allow more than 10 percent of the rated lumens to project above 80 degrees from vertical.

10.3.2.3.2 The luminaire shall not allow more than 2.5 percent of the rated lumens to project above 90 degrees from vertical.

10.3.3 Thermal Management

10.3.3.1 The thermal management (of the heat generated by the LEDs) shall be of sufficient capacity to assure proper operation of the luminaire over the minimum operational life (section 2.2).

10.3.3.1.1 The LED manufacturer's maximum junction temperature for the minimum operational life (Section 2.2) shall not be exceeded.

10.3.3.1.2 The designed maximum junction temperature shall not exceed 221°F (105°C)

10.3.3.1.3 The junction-to-ambient thermal resistance shall be 58°F/Watt or less.

10.3.3.2 Thermal management shall be passive by design.

10. 3.3.2.1 The use of fans or other mechanical devices shall not be allowed.

10.3.3.2.2 The heat sink material shall be aluminum or other material of equal or lower thermal resistance.

10.3.3.3 The luminaire may contain circuitry that will automatically reduce the power to the LEDs to a level that will insure that the maximum junction temperature is not exceeded, when the ambient, outside air temperature is 100°F or greater.

10.3.4 Physical and Mechanical Requirements

10.3.4.1 The luminaire shall be a single, self-contained device, not requiring on-site assembly for installation. The power supply for the luminaire shall be integral to the unit.

10.3.4.2 The maximum weight of the luminaire shall be 35 lbs.

10.3.4.3 The maximum effective projected area (when viewed from either side or either end) shall be 1.4 sq ft.

10.3.4.4 The housing shall be a light to medium gray color within the Federal Standard 595B ranges of 26250 to 26500 for semi-gloss sheen, or 36250 to 36500 for flat sheen.

10.3.4.5 Each housing shall be provided with a slip-fitter capable of mounting on a 2 inch pipe tenon.

10.3.4.5.1 This slip-fitter shall fit on mast-arms from 1-5/8 to 2-3/8 in (O.D.)

10.3.4.5.2 The slip-fitter shall be capable of being adjusted a minimum of ±5 degrees from the axis of the tenon in a minimum of five steps (+5, +2.5, 0, -2.5, - 5).

10.3.4.5.3 The clamping brackets of the slip-fitter shall not bottom out on the housing bosses when adjusted within the designed angular range.

10.3.4.5.4 No part of the slip-fitter mounting brackets on the luminaires shall develop a permanent set in excess of 1/32 in. when the two or four 3/8 in. diameter cap screws used for mounting are tightened to 10 ft-lb.

10.3.4.5.5 Two sets of cap screws may be supplied to allow for the slip-fitter to be mounted on any pipe tenon in the acceptable range without the cap screws bottoming out in the threaded holes.

10.3.4.5.6 The cap screws and the clamping bracket(s) shall be made of corrosion resistant materials and be compatible with the luminaire housing and the mast-arm, or treated to prevent galvanic reactions.

10. 3.4.6 The assembly and manufacturing process for the LED luminaire shall be designed to assure all internal components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

10. 3.4.7 Luminaires to be mounted on horizontal mast arms, when tested in conformance with California Test 611 (as modified below), shall be capable of withstanding cyclic loading in (G = Acceleration of Gravity):

10.3.4.7.1 a vertical plane at a minimum peak acceleration level of 3.0 G peak-to-peak sinusoidal loading (same as 1.5 G peak) with the power supply installed, for a minimum of 2 million cycles without failure of any luminaire parts, and

10.3.4.7.2 a horizontal plane perpendicular to the direction of the mast arm at a minimum peak acceleration level of 1.5 G peak-to-peak sinusoidal loading (same as 0.75-G peak) with the power supply installed, for a minimum of 2 million cycles without failure of any luminaire parts.

10.3.4.8 The housing shall be designed to prevent the buildup of Adequate water on the top of the housing.

10.3.4.8.1 Exposed heat sink fins shall be oriented so that water can freely run off the luminaire, and carry dust and other accumulated debris away from the unit.

10.3.4.9 The optical assembly of the luminaire shall be protected against dust and moisture intrusion per the requirements of IP-66 (minimum).

10.3.4.10 The electronics/power supply enclosure shall be protected per the requirements of IP-43 (minimum).

10.3.4.11 Each luminaire shall be furnished with an ANSI C136.10 compliant, locking type, photocontrolreceptacle. A rain tight shorting cap must be provided and installed. The receptacle must conform to the requirements of Standard Specification 86- 6.07B(1).

10.3.4.11.1 When available, an ANSI C136.41 compliant, locking type photocontrol receptacle with dimming connections shall be furnished in place of the ANSI C136.10 compliant receptacle.

10. 3.4.12 When the components are mounted on a down opening door, the door shall be hinged and secured to the luminaire housing separately from the refractor or lens frame. The door shall be secured to the housing in a manner to prevent its accidental opening. A safety cable shall mechanically connect the door to the housing.

10.3.4.13 Field wires connected to the luminaire shall terminate on a barrier type terminal block secured to the housing. The terminal screws shall be captive and equipped with wire grips for conductors up to No. 6. Each terminal position shall be clearly identified.

10.3.4.14 The power supply shall be contained inside the luminaire.

10.3.4.14.1 The power supply shall be rated for outdoor operation. The power supply must have a minimum IP rating of IP65.
10.3.4.14.2 The power supply shall be rated for a minimum life expectancy equal to or greater than the minimum operation life (Section 2.2) of the luminaire.
10.3.4.14.3 The power supply case temperature shall have a self rise of 45° F or less above ambient temperature in free air with no additional heat sinks.
10.3.4.14.4 The power supply shall have two leads to accept standard 0-10V Dimming control. (compatible with IEC 60929 Annex E)
10.3.4.14.5 If the control leads are open or the analog control signal is lost, the driver will default to 100% power.

10.3.5 Materials

10.3.5.1 Housings shall be fabricated from materials that are designed to withstand a 3000-hour salt spray test as specified in ASTM Designation: B117.
10.3.5.2 Each refractor or lens shall be made from UV inhibited high impact plastic (such as acrylic or polycarbonate) or heat and impact resistant glass, and be resistant to scratching.
10. 3.5.3 All aluminum used in housings and brackets shall be a marine grade alloy with less than 0.2% copper. All exposed aluminum shall be anodized.
10.3.5.4 Polymeric materials (if used) of enclosures containing either the power supply or electronic components of the luminaire shall be made of UL94VO flame retardant materials. The len(s) of the luminaire are excluded from this requirement.
10.3.5.5 Paint or powder coating of the housing shall conform to the requirements of the Caltrans Standard Specifications and the Caltrans Standard Special Provisions.

10.3.6 Luminaire Identification

10.3.6.1 Each luminaire shall have the manufacturer's name, trademark, model number, serial number, date of manufacture (month-year), and lot number as identification permanently marked inside the each unit and the outside of each packaging box.
10.3.6.2 The following operating characteristics shall be permanently marked inside each unit: rated voltage and rated power in Watts and Volt-Ampere.

10.4 Quality Assurance

10.4.1 The luminaires shall be manufactured in accordance with a manufacturer quality assurance (QA) program. The QA program shall include two types of quality assurance: (1) design quality assurance and (2) production quality assurance. The production quality assurance shall include statistically controlled routine tests to ensure minimum performance levels of the modules built to meet this specification, and a documented process of how problems are to be resolved.
10.4.2 QA process and test results documentation shall be kept on file for a minimum period of seven years.
10.4.3 LED luminaire designs not satisfying design qualification testing and the production quality assurance testing performance requirements described below shall not be labeled, advertised, or sold as conforming to this specification.
10.4.4 Design Qualification Testing

10.4.4.1 Design Qualification Testing shall be performed by the manufacturer or an independent testing lab hired by the manufacturer on new luminaire designs, and when a major design change has been implemented on an existing design. A major design change is defined as a design change (electrical or physical) which changes any of the performance characteristics of the luminaire, results in a different circuit configuration for the power supply, or changes the layout of the individual LED's in the module.
10.4.4.2 A quantity of two units for each design shall be submitted for Design Qualification Testing
10.4.4.2.1 Test units shall be submitted to The Coty of Victorville after the manufacturer's testing is complete. 10.4.4.2.2 Manufacturer's testing data shall be submitted with test units for Victorville verification of Design Qualification Testing data.
10.4.4.2.3 Product submittals shall be accompanied by product specification sheets or other documentation that includes the designed parameters as detailed in this specification. These parameters include (but not limited to):
10.4.4.2.3.1 Maximum power in Watts
10.4.4.2.3.2 Maximum Designed Junction Temperature
10.4.4.2.3.3 Heat sink area in square inches.
10.4.4.2.3.4 Designed junction to ambient thermal resistance calculation with thermal resistance components clearly defined.
10.4.4.2.3.5 L70 in hours, when extrapolated for the average nighttime operating temperature (section 2.3)

10. 4.4.2.4 Product submittals shall be accompanied by IES LM-79 and IES LM-80 compliant test reports from a CALiPER qualified or NVLAP approved testing laboratory for the specific model being submitted.

10.4.4.2.5 Product submittals shall be accompanied by a IES LM63 compliant photometric file (IES) based on the LM-79 test report.

10.4.4.2.6 Product submittals shall be accompanied by initial and depreciated isofootcandle charts showing the specified minimum illuminance curve for that particular application.

10.4.4.2.6.1 The charts shall be calibrated to feet and show a 40 by 40 foot grid.

10.4.4.2.6.2 The charts shall be calibrated to the mounting height specified for that particular application.

10.4.4.2.6.3 The depreciated isofootcandle curve shall be calculated at the minimum operational life.

10. 4.4.2.7 Product submittals shall be accompanied by a test report showing SPD performance as tested per the definitions and procedures in ANSI/IEEE C62.41.2 and ANSI/IEEE C62.45.

10.4.4.2.8 Product submittals shall be accompanied by a test report detailing the results of California Test 611 (or equal), the mechanical vibration requirements.

10.4.4.2.9 One test unit shall be fitted with temperature sensors

10.4.4.2.9.1 Temperature sensors shall be thermistor or thermocouple type

10.4.4.2.9.2 Thermocouples will be either Type K or Type C.

10.4.4.2.9.3 Thermistors shall be negative temperature coefficient (NTC) type with a nominal resistance of 20k ohm.

10.4.4.2.9.4 Temperature sensors shall be mounted on the LED solder pads as close to the LED as possible.

10.4.4.2.9.5 One temperature sensor shall be mounted on the power supply (driver) case.

10.4.4.2.9.6 Light bar or modular systems shall have one sensor for each module, mounted as close to the center of the module.

10.4.4.2.9.7 Other configurations shall have at least 5 sensors per luminaire.

10.4.4.2.9.8 The appropriate thermocouple wire shall be used. The leads shall be a minimum of 6 ft.

10.4.4.2.9.9 Documentation shall accompany the test unit that details the type of sensor used.

10. 4.4.3 Burn In. The sample luminaires shall be energized for a minimum of 24 hours, at 100 percent on-time duty cycle, at a temperature of +70°F (+21°C) before performing any design qualification testing.

10. 4.4.4 Any failure of the luminaire, which renders the unit non-compliant with the specification after burn-in, shall be cause for rejection.

10.4.4.5 The luminaire shall be tested according to California Test No. 678, and as described herein.

10.4.4.5.1 Luminaire performance shall be judged against the specified minimum illuminance in the specified pattern for a particular application.

10. 4.4.5.2 The luminaire lighting performance shall be adjusted (depreciated) for the minimum life expectancy (Section 2.2).

10.4.4.5.2.1 The performance shall be adjusted (depreciated) by using the LED manufacturer's data or the data from the LM-80 test report, which ever one results in a higher level of lumen depreciation.

10.4.5 Quality Assurance Testing (random sample testing)

10.4.5.1.1 The City may perform random sample testing on all shipments.

10.4.5.1.2 Testing shall be completed within than 30 days after delivery to the Transportation Laboratory.

10. 4.5.1.3 Luminaires shall be tested according to California Test No. 678, and as described herein.

10.4.5.1.4 All parameters of the specification may be tested on the shipment sample.

10. 5 Warranty The manufacturer shall provide a warranty against loss of performance and defects in materials and workmanship for the luminaires for a period of 84 months after acceptance of the luminaires. Replacement luminaires shall be provided promptly after receipt of luminaires that have failed at no cost to the City of Victorville. All warranty documentation shall be given to the Translab prior to random sample testing.

11. TURN-ON

11.1 The Contractor shall arrange to have a technician, qualified to work on the controller and employed by the controller manufacturer or his representative, present at the time the equipment is turned on.

11.2 The Contractor shall arrange to have a factory trained individual representing the manufacturer of each product present at signal turn on including but not limited to; controller, cabinet, Battery back up, video detection, and Pre-Emption.

11.3 Contingent items. The lump sum shall include all extender boards plus any incidental equipment necessary to completely test the controller unit during normal operation.

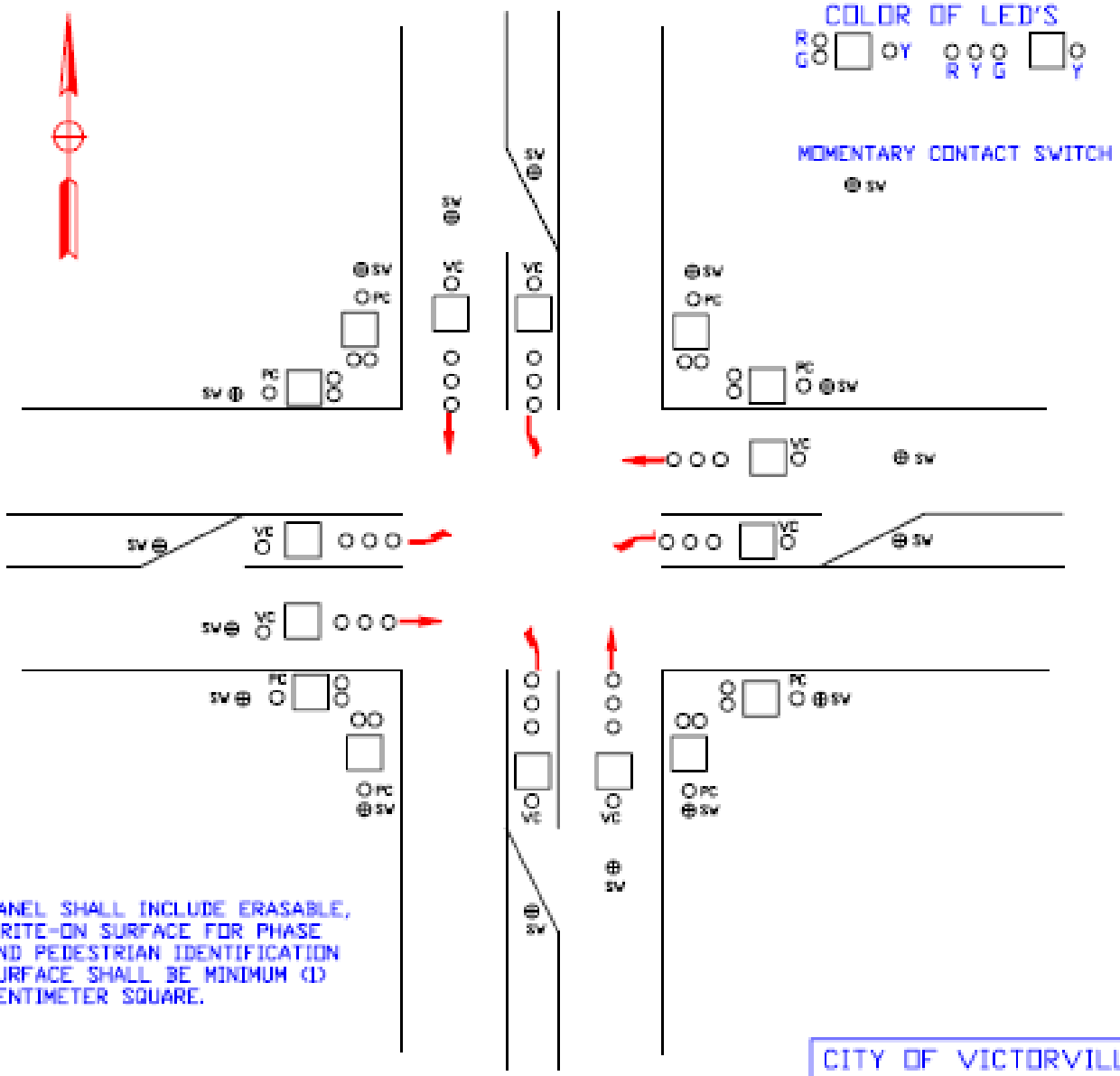
11.4 This special provision is intended to provide for a complete and functioning intersection. All wires, cables, adapter, jumpers, and other items required to allow the intersection to operate to the fullest extent of the capability of the provided equipment but not specifically mentioned in these special provisions shall be supplied at no additional cost.

11.5 Signal turn on shall be scheduled between the hours of 10:00 AM and 2:00PM. Signal turn on shall be on a regular business day and shall not precede a day that City Hall is closed. In order to allow for operational observation. Unless approved by the City Engineer.

11.6 Signal turn on shall not be scheduled until after the cabinet and all equipment have been tested and approved by the City of Victorville Engineering Department Maintenance Division.

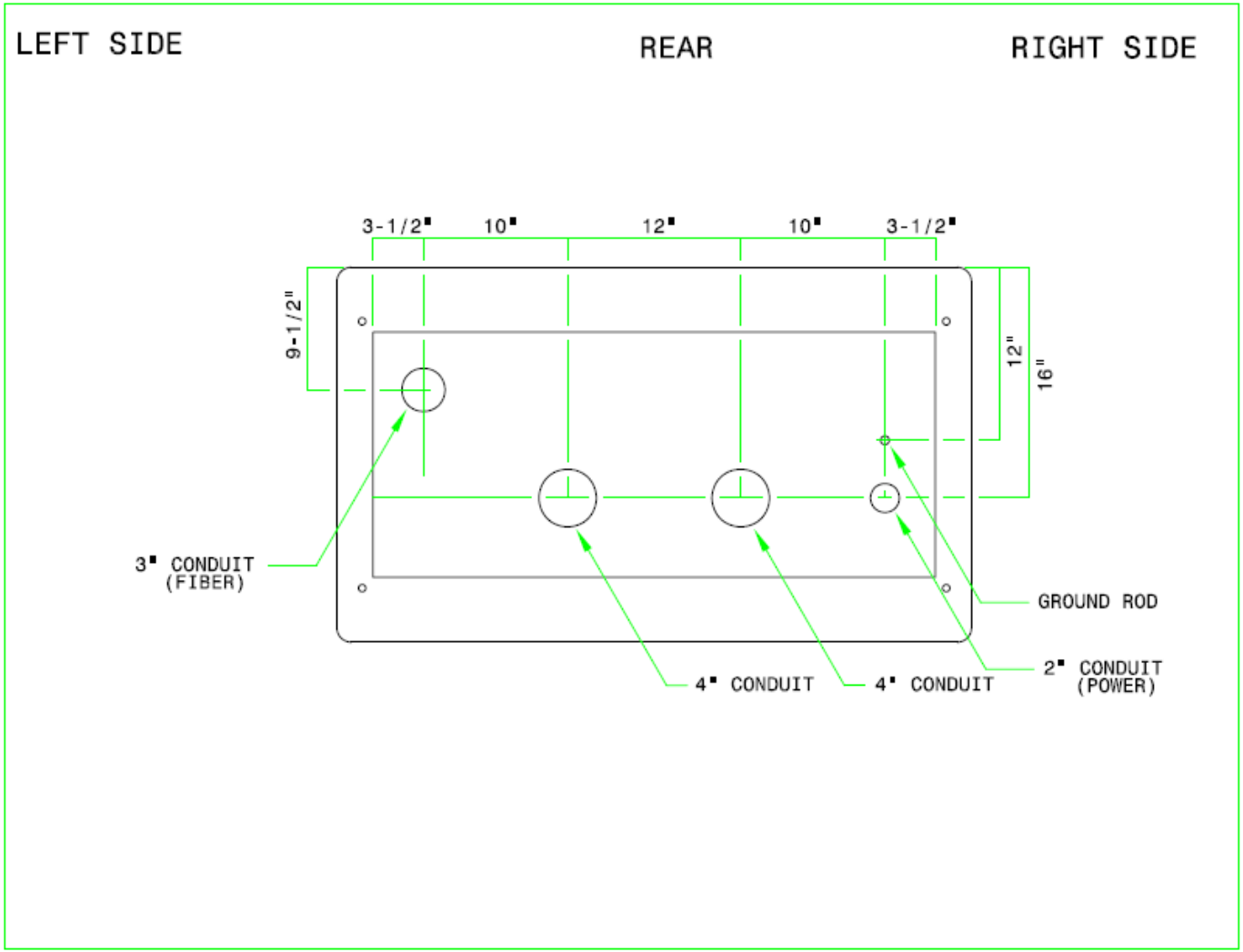
11.7 Turn on shall include configuration and testing of all equipment as well as central software and communication systems.
During the City cabinet test phase the Contractor shall arrange to have qualified technicians to complete modifications to the City Central Software system (ATMS Now by Naztec/Trafficware). The City shall provide the technical information (IP address scheme) with the project specifications. Project shall not be considered complete until all communication and operation is accepted.

APPENDIX I



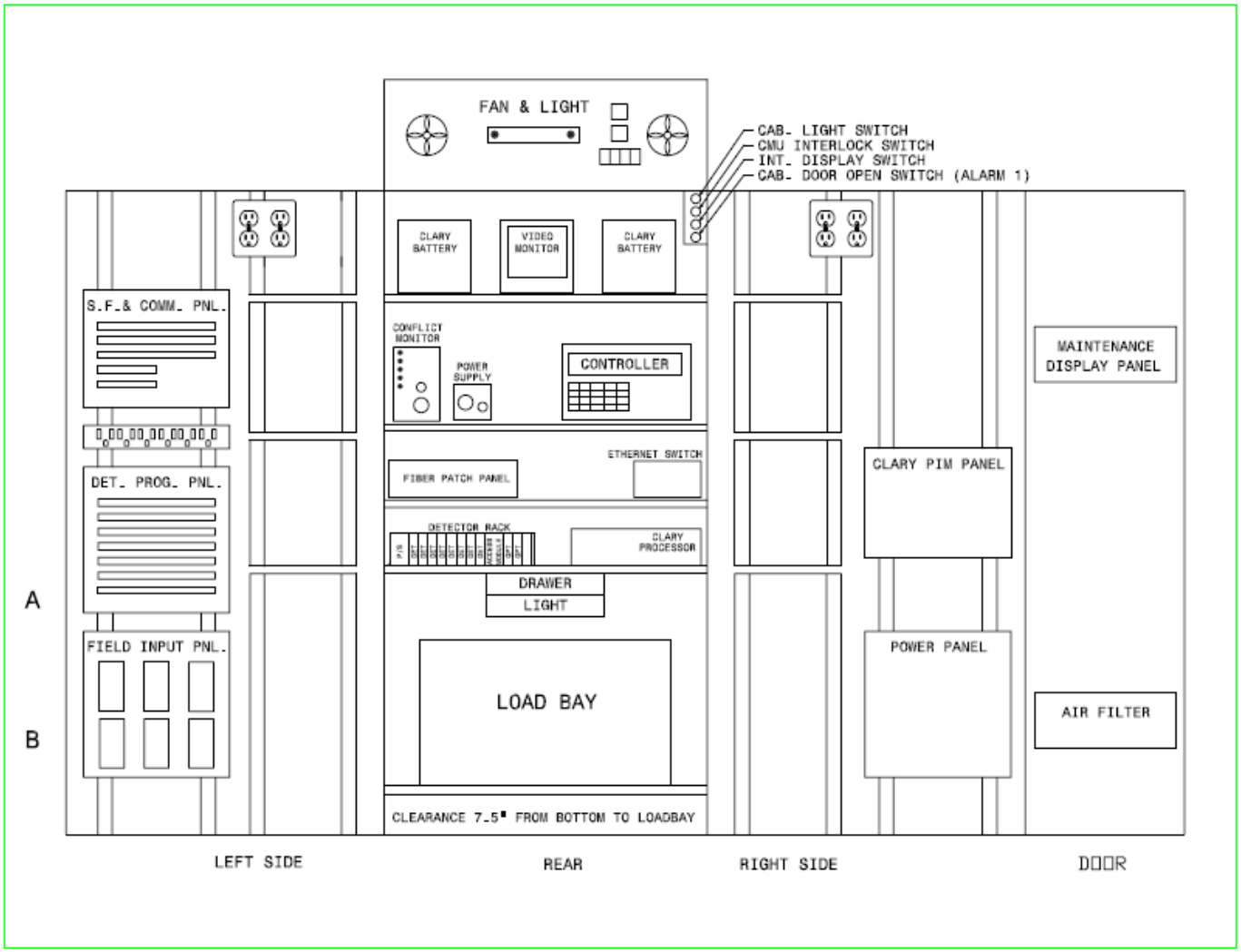
CITY OF VICTORVILLE		
8 PHASE PANEL DISPLAY		
1/96	N.T.S.	G. HELDRETH

Foundation Layout

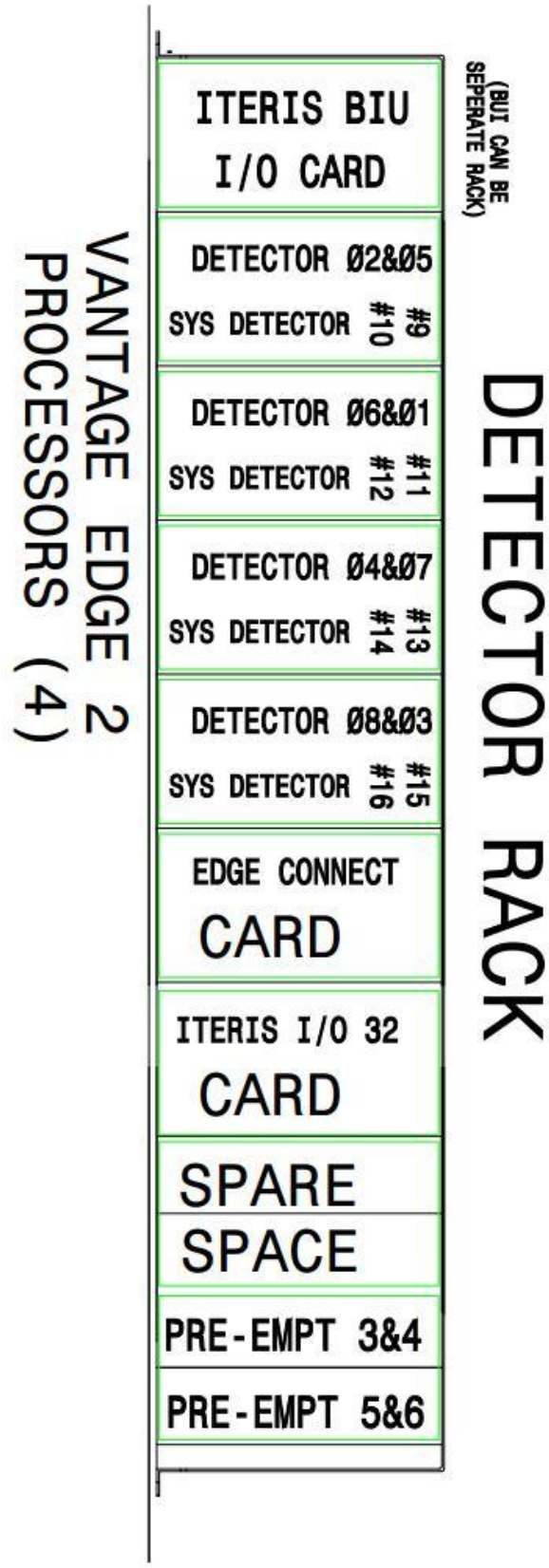


City of Victorville
March 5, 2009

Cabinet Layout



City of Victorville
March 5, 2009


DETECTOR RACK
(BUI CAN BE SEPERATE RACK)
ITERIS BIU I/O CARD
DETECTOR Ø2&Ø5
SYS DETECTOR #9 #10
DETECTOR Ø6&Ø1
SYS DETECTOR #11 #12
DETECTOR Ø4&Ø7
SYS DETECTOR #13 #14
DETECTOR Ø8&Ø3
SYS DETECTOR #15 #16
EDGE CONNECT CARD
ITERIS I/O 32 CARD
SPARE
SPACE
PRE-EMPT 3&4
PRE-EMPT 5&6
VANTAGE EDGE 2 PROCESSORS (4)

Cost Breakdown

		Unit	Cost
	Traffic Signal Controller	EA	
	Traffic Signal Cabinet Enclosure	EA	
	Video detection system	EA	
	Emergency Preempt system	EA	
	Conflict monitor	EA	
	Traffic Surveillance equipment	EA	
	Ethernet radios	EA	
*	Fiber cable (if required)	LF	
	Ethernet over copper wire (if required)	EA	
	Ethernet switch	EA	
	Digi Port Server	EA	
	Uninterruptible power supply	EA	
	Pedestrian push buttons	EA	
	Pedestrian signal heads and hardware	EA	
*	Standards and Poles	EA	
	LED Vehicle indications	EA	
	Signal heads and hardware	EA	
	luminaries and lighting fixtures	EA	
	Internally illuminated street name signs	EA	
	Electrical service equipment enclosure	EA	
*	Foundations	EA	
*	Conduit	LF	
	Pull boxes	EA	
*	Conductors and cables	LF	
	telephone demarcation cabinet	EA	

*Cost breakdown must include type, size and installation method

Submittal Requirement list

	Manufacturer/Supplier	Model	Approval
Traffic Signal Controller			
Traffic Signal Cabinet Enclosure			
Video detection system			
Emergency Preempt system			
Conflict monitor			
Traffic Surveillance equipment			
Ethernet radios			
Fiber cable (if required)			
Ethernet over copper wire (if required)			
Ethernet switch			
Digi Port Server			
Uninterruptible power supply			
Accessible Pedestrian Signal (APS) System			
Pedestrian indications			
Signal poles			
LED Vehicle indications			
Luminaries			
Internally illuminated street name signs			
Electrical service pedestal			

This is the minimum equipment that shall have submittals provided. Additional submittals may be required and shall be accepted.

Project: Amethyst Rd @ Hook Blvd

Date Received_____

INTERSECTION EQUIPMENT LIST

		Quantity	
1	TRAFFIC SIGNAL CONTROLLER	1	
2	TRAFFIC SIGNAL ENCLOSURE CABINET	1	
3	VIDEO DETECTION SYSTEM		
	Cameras	4	
	Single channel Processors	4	
	I/O Module	1	
	Extension modules	2	
	software package	1	
	Edge connect module	1	
4	EMERGENCY PREEMPTION SYSTEM		
	Emitters	0	
	Remote Coding unit	0	
	Detectors	4	
	Phase selector	1	
	Card Rack	0	
	System Interface software	1	
	EVP Central Management software license	1	
	Serial to Ethernet Port Server	1	
5	CONFLICT MONITOR	2	
6	Traffic Surveillance equipment		
	Four Port Video Server	1	
	Ethernet Pan/Tilt/Zoom Camera	1	
7	Communications Equipment		
	Ethernet radios	2	
	Fiber cable	N/A	
	Ethernet over copper wire	N/A	
	Ethernet switch (system)	2	
	Cisco IE3000-8TC Switch, 8 10/100 + 2 T/SFP		
	Cisco IEM-3000-4SM 4port SFP expansion module		
	Cisco PWR-IE50W-AC AC Power Module		
	Cisco 100Mbps Single Mode Rugged SFP- 6 each		
8	Uninteruptable power supply	1	
9	Pedistrian Requirements		
	Pedistrian push buttons	8	
	Pedistrian indications	8	
	Accessible Pedestrian Signal (APS) System	8	
	APS push button Assembly	per Plan	
	Signal poles	per Plan	
	LED Vehicle indications	per Plan	
	Luminaires	4	
	LED Internallally illuminated street name signs	1	
	Electrical service pedistal	1	
Intersection: Amethyst Rd @ Hook Blvd			

INTERSECTION AND EQUIPMENT IP ADDRESS ASIGNMENT

Intersection: Amethyst Rd@ Hook Blvd		
192.168.100.5	Gateway	
255.255.254.0	Subnet Mask	
192.168.101.140	Switch	
101.141	Controller	
101.142	Iteris system	
101.143	Clary system	
101.144	PTZ Camera	
101.145	Ethernet Radio	
101.146	EVP	
101.147	Radio Master	
101.148	Pedestrian System	
101.149	spare	

PLANS

DIGALERT
800-227-2600
Call 2 Full Working Days In Advance

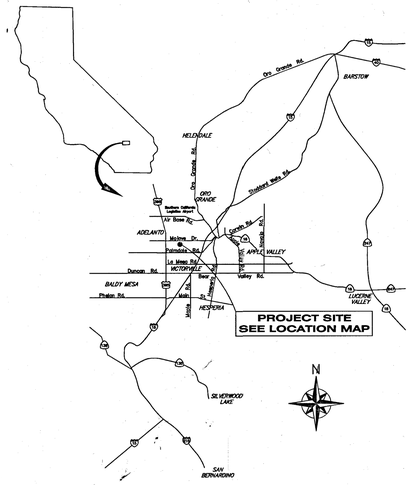
CITY OF VICTORVILLE

SAN BERNARDINO COUNTY, CALIFORNIA

DRAWINGS FOR CONSTRUCTION OF:

TRAFFIC SIGNAL INSTALLATION ON AMETHYST RD AT HOOK BLVD

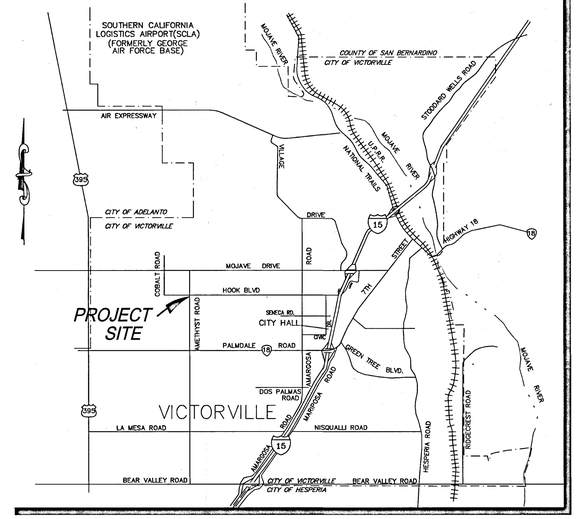
Project No. 2504500-55330-62025



KEY MAP
NOT TO SCALE

GENERAL NOTES

1. *ALL WORK SHALL BE DONE IN ACCORDANCE WITH THESE PLANS, SPECIAL PROVISIONS, THE CITY OF VICTORVILLE DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS DATED JANUARY 8, 2007, CURRENT CALIFORNIA MUTCD AND THE CALTRANS STANDARD PLANS AND SPECIFICATIONS DATED MAY 01, 2010 (UNLESS OTHERWISE SPECIFIED).*
2. *THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUALLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY OF VICTORVILLE HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.*
3. *IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF/HERSELF WITH THE JOB SITE AND ANY OVERHEAD OR UNDERGROUND UTILITIES SHOWN OR NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT AT 1-800-422-4133 TO LOCATE UTILITY FACILITIES AT LEAST TWO (2) WORKING DAYS BEFORE DOING ANY EXCAVATION. ALL PIPELINES, SUBSTRUCTURES, OR UTILITIES OF ANY KIND, WHETHER SHOWN ON THESE PLANS OR NOT, SHALL BE PROTECTED IN-PLACE OR IF REQUIRED, BE REMOVED, RELOCATED OR REINFORCED TO THE SATISFACTION OF THE CITY ENGINEER AND THE COMPANY OWNING THE FACILITY.*
4. *THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE CITY ENGINEER.*
5. *IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ANY PERMITS REQUIRED BY THE CITY OF VICTORVILLE ENGINEERING DEPARTMENT AND RELEVANT TO THE OTHER AGENCIES IN ORDER TO DO THE WORK SHOWN ON THESE PLANS. ALL COSTS INCURRED FOR OBTAINING ENCROACHMENT PERMITS WILL BE REIMBURSED BY THE CITY OF VICTORVILLE.*
6. *CONSTRUCTION TRAFFIC CONTROLS, TEMPORARY STRIPING AND SIGNING SHALL BE PROVIDED BY CONTRACTOR IN ACCORDANCE WITH THE CURRENT CALIFORNIA MUTCD AND AS APPROVED BY THE ENGINEER.*
7. *ACCESS TO ALL DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES EXCEPT WHEN PRECLUDED BY NECESSARY CONSTRUCTION FOR A REASONABLE PERIOD OF TIME AS APPROVED BY THE CITY ENGINEER.*
8. *THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER OF ANY DISCREPANCIES OR UNUSUAL CONDITIONS ON THE PLANS, DETAILS OR CONSTRUCTION NOTES PRIOR TO FINALIZATION OF THE BIDS AND COMMENCEMENT OF ANY CONSTRUCTION.*
9. *IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT SURVEYING MONUMENTS IN PLACE, AND THE CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR RESETTING DAMAGED OR DESTROYED MONUMENTS.*
10. *THE CITY WILL BE RESPONSIBLE FOR PROVIDING ALL SOIL TESTING, COMPACTION TESTING AND CONSTRUCTION STAKING.*
11. *THE CONTRACTOR SHALL REMOVE FROM THE VICINITY OF THE COMPLETED WORK ALL PLANTS, BUILDING RUBBISH, UNUSED MATERIALS, CONCRETE FORMS, AND EQUIPMENT BELONGING TO HIM/HER OR USED UNDER HIS/HER DIRECTION DURING CONSTRUCTION UNTIL ACCEPTANCE OF WORK BY THE CITY OF VICTORVILLE.*
12. *TRENCH BACK FILL AND PAVEMENT REPAIRS SHALL COMPLY WITH CITY OF VICTORVILLE STANDARD NO. S-10.*
13. *ALL LATERAL CUTS IN CITY MAINTAINED ROADWAYS SHALL BE TESTED TO VERIFY DENSIFICATION TO 90% RELATIVE COMPACTION (R.C.) AT VARYING DEPTH TO WITHIN 0.5' SHALL BE DENSIFIED TO 95%*
14. *ALL TRAFFIC CONTROL DEVICES, ROAD SIGNS, FENCES, MARKERS, IRRIGATION SPRINKLERS, AND LANDSCAPE TO BE REPLACED, REMOVED OR RELOCATED SHALL BE PER THESE PLANS OR AS DIRECTED BY THE ENGINEER.*
15. *LANE CLOSURES ON AMARGOSA RD SHALL REQUIRE THE USE OF AN FLASHING ARROW BOARD.*
16. *ERECTION OF SIGNAL POLES WILL REQUIRE COORDINATION WITH SOUTHERN CALIFORNIA EDISON TO MAINTAIN SAFE WORKING CONDITIONS.*



LOCATION MAP
NOT TO SCALE

LEGEND

CONDUIT

PROPOSED	EXISTING	
——— ———	——— ———	Conduit-Lighting, unless otherwise indicated or noted
——— ———	——— ———	Traffic signal conduit
—C— —C—	—C— —C—	Communication conduit
—S— —S—	—S— —S—	Sprinkler control conduit
—T— —T—	—T— —T—	Telephone conduit
—F— —F—	—F— —F—	Fire alarm conduit
——— ———	——— ———	Conduit termination (Detail C, ES-9A in structures)
R	R	Conduit riser in structure

SERVICE EQUIPMENT

PROPOSED	EXISTING	
OH	OH	Overhead lines
U	U	Wood pole "U" indicates utility owned
		Pole guy-with anchor
		Pad mount for ground - Mounted utility transformer
III		Service equipment enclosure type
		Service equipment enclosure door indicates front of enclosure
T	T	Telephone demarcation cabinet

POLE-MOUNTED SERVICE DESIGNATION

Type of installation
TYPE K - 25' — Pole height above grade

UNDERGROUND UTILITIES

W Water
G Gas
S Sewer
E Electric
T Telephone

SIGNAL EQUIPMENT

PROPOSED	EXISTING	
		Pedestrian signal
		Pedestrian push button post
		Pedestrian barricade
		Vehicle signal face, 3-Section: 12"red, yellow and green sections.
		Vehicle signal face with angle visor
PV		Modifications of basic symbols: "L" Indicates all non-arrow sections louvered "LC" Indicates louvered green section only "PV" Indicates 12" programmed visibility sections
		Vehicle signal face with backplate
		Vehicle signal face with 12" red, yellow and green left arrow sections
		Vehicle signal face with 12"red and yellow sections and 12"up green arrow
		Vehicle signal face (5-Section) with 12" yellow and green right arrows and 12" red, yellow and green sections
		Type 1 Standard and attached signals
		Standard with signal mast arm only and attached signals
		Type 33 Standard, Left-turn signal and sign
		Standard with luminaire and signal mast arms and attached signals
		Cantilever flashing beacons Type 9 Frame, unless otherwise specified or indicated
R	Y	Flashing beacon. One signal section with 12" lens, backplate and visor. "R" indicates red lens, "Y" indicated yellow lens.
		Controller assembly. Door indicates front of cabinet
		Guard post
		Type 1 Standard-"Meter On" sign

PULL BOXES

PROPOSED	EXISTING	
		Pull box-No. 5 unless otherwise indicated or noted as below.
3	9*(21)	Pull box-Additional designations or descriptions (C) = Communications pull box (E) = Pull box with extension (S) = Sprinkler control pull box (21) = Anchor bolts and conduit for future installation of Type 21 Standard (T) = Traffic pull box

3 = No. 3 pull box
5 = No. 5 pull box
6 = No. 6 pull box
7 = No. 7 (Ceiling pull box)
8 = No. 8 (Pendant soffit pull box)
9 = No. 9 pull box
9A = No. 9A pull box

PROPOSED	EXISTING	
		Inductive loop detector. Outline and location of sawcut shown. (Type A loop illustrated)
		Magnetometer detectors
		Magnetic detector
		Detector handhole Type A unless otherwise specified

MISCELLANEOUS EQUIPMENT

PROPOSED	EXISTING	
		Opticom sensor unit
		Video detection unit

REGISTERED PROFESSIONAL ENGINEER
BRIAN W. GENGLER
No. 44730
CIVIL
STATE OF CALIFORNIA

CITY OF VICTORVILLE

ENGINEERING DEPARTMENT
14343 Civic Drive, Victorville, Ca. 92392 (760) 955-5158

NO.	REVISIONS	BY	DATE

FIELD BOOK NO. (S) 85/58-59
BENCH MARK:
ELEVATION =

TRAFFIC SIGNAL INSTALLATION ON AMETHYST RD @ HOOK BLVD
TITLE/INDEX SHEET

DESIGN BY: G.H.
DRAWN BY: G.H.
CHECKED BY:
DATE: 4/14/15

SHEET NO. 1 OF 6
DRAWING No. S-833
PROJ. No. 2504500-55330-62025

APPROVED BY: CITY ENGINEER Brian W. Gengler BRIAN W. GENGLER
DATE: 7-30-15 R.C.E. 44730

Plot Date: 07/20/2015 5:03:17 PM User: Gheidreth File Name: N:\CAD\CIP\Amethyst & Hook Signal\SHEET1_TITLE.dwg Last Update: 6/18/2015 3:26:20 PM

CABLE, CONDUCTOR, AND CONDUIT SCHEDULE

AWG OR CABLE			RUNS 1	2	3	4	5	6	7	8	9	10	11
* SIGNAL CABLES	3 CONDUCTOR	FOR POLE A				1	1						
		FOR POLE B											
		FOR POLE C											
		FOR POLE D											
		FOR POLE H				1	1	1					
		FOR POLE I			1	1							
		FOR POLE J		1	1	1							
		FOR POLE K	1	1	1	1							
		FOR POLE L				1	1	1	1	1	1		
		FOR POLE M				1	1	1	1	1			
		FOR POLE N				1	1	1	1				
		TOTALS	1	2	3	8	5	4	3	2	1		
	12 CONDUCTOR	FOR POLE A				1	1						
		FOR POLE B			1	1							
		FOR POLE C		1	1	1							
		FOR POLE D	1	1	1	1							
		FOR POLE E				1	1	1	1	1	1		
		FOR POLE F				1	1	1	1	1			
		FOR POLE G				1	1	1	1				
		FOR POLE H				1	1	1					
		TOTALS	1	2	3	8	5	4	3	2	1		
#12 AWG	I.I.S.N.S.			2	2		2	2	2	2	2		
	TOTALS			2	2		2	2	2	2	2		
#10 AWG	LUMINAIRE			2	2		2	2	2	2	2		
	TOTALS			2	2		2	2	2	2	2		
#8 AWG	BARE GROUND		1	1	1	2	1	1	1	1	1		
	TOTALS		1	1	1	2	1	1	1	1	1		
** ITERIS COAXIAL CABLE	#1, 6			1	1	1							
	#2, 5					1	1	1	1				
	#3, 8					1	1	1	1	1	1		
	#4, 7					1	1	1					
	TOTALS			1	1	4	3	3	2	1	1		
** ITERIS POWER CABLE	#1, 6			1	1	1							
	#2, 5					1	1	1	1				
	#3, 8					1	1	1	1	1	1		
	#4, 7					1	1	1					
	TOTALS			1	1	4	3	3	2	1	1		
** OPTICOM M138 CABLE				1	1	4	3	2	1	1	1		
TOTALS				1	1	4	3	2	1	1	1		
CATAGORY 5 ETHERNET CABLE							1	1					
TOTALS							1	1					
CONDUIT SIZE			3"	4"	4"	2-4"	4"	4"	4"	4"	3"		

* SIGNAL CABLE (3 AND 12 CONDUCTOR) SHALL NOT BE SPLICED. RUN CABLE UP TO THE HANDHOLE AT EACH SIGNAL STANDARD. STRIP THE CABLE AT THIS POINT AND AT THE SIGNAL HEAD. THE OTHER UNUSED CONDUCTORS SHALL HAVE THE ENDS INSULATED AT THE HANDHOLE.

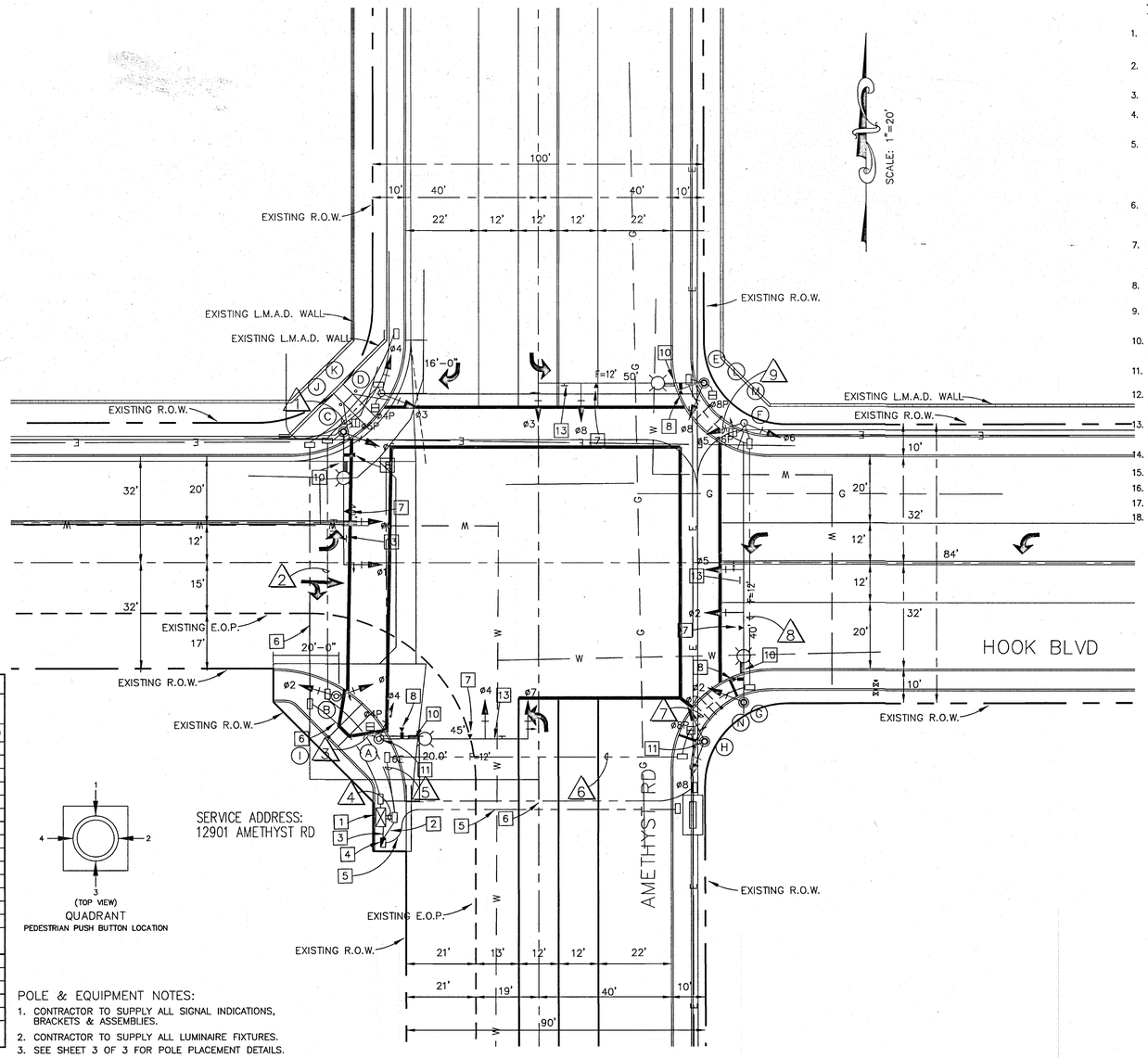
** RUN ONE CONTINUOUS PULL (WITHOUT SPLICES) BETWEEN THE UNIT MOUNTING LOCATION AND THE TRAFFIC CONTROL CABINET.

SIGNAL CABLE USE SCHEDULE

AWG OR CABLE			NUMBER OF CABLE CONDUCTORS USED FOR EACH POLE: A	B	C	D	E	F	G	H	I	J	K	L	M	N
12 CONDUCTOR	# 14 AWG	VEHICLE SIGNALS ø1		3	3											
		ø2		3					3							
		ø3				3	3									
		ø4	3			3										
		ø5						3	3							
		ø6			3			3								
		ø7	3							3						
		ø8					3			3						
		PEDESTRIAN SIGNALS ø2P		3					3							
		ø4P	3			3										
		ø6P			3			3								
		ø8P					3			3						
		SPARES	3	3	3	3	3	3	3	3						
	# 12 AWG	COMMON	1	1	1	1	1	1	1	1						
	TOTAL CONDUCTORS USED		12	12	12	12	12	12	12	12	–	–	–	–	–	–
3 CONDUCTOR	# 14 AWG	PEDESTRIAN PUSH BUTTONS ø2P	1							1						
		ø4P									1					1
		ø6P										1	1			
		ø8P												1	1	1
		COMMON	1							1	1	1	1	1	1	1
	TOTAL CONDUCTORS USED		2	2						2	2	2	2	2	2	2

POLE AND EQUIPMENT SCHEDULE

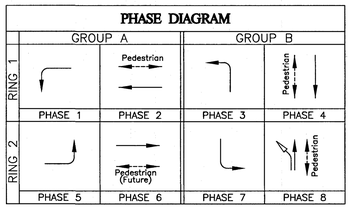
NO.	STANDARD TYPE	HEIGHT	SIG.	LUM.	SIGNAL MOUNTING MAST ARM	VEHICLE	PED	PED ø	PPB ø	QUAD	LED LUMINAIRE	IISNS LEGEND	REMARKS
A	26A-4-100	35'	45'	15'	2-MAS	SV-1-T	SP-1-T	4	2	(future) 1	Roadway 2	HOOK BLVD	7 8 9 10 11 13
B	1-A	10'	–	–	–	TV-2-T	(future) SP-1-T	2	–	–	–	–	
C	26-4-100	30'	40'	15'	2-MAS	SV-1-T	SP-1-T	6	–	–	Roadway 2	AMETHYST RD	7 8 10 13
D	1-A	10'	–	–	–	TV-2-T	SP-1-T	4	–	–	–	–	
E	29-5-100	30'	50'	15'	2-MAS	SV-1-T	SP-1-T	8	–	–	Roadway 2	HOOK BLVD	7 8 10 13
F	1-A	10'	–	–	–	TV-2-T	SP-1-T	6	–	–	–	–	
G	26-4-100	30'	40'	15'	2-MAS	SV-1-T	(future) SP-1-T	2	–	–	Roadway 2	AMETHYST RD	7 8 10 13
H	1-A	10'	–	–	–	TV-2-T	SP-1-T	8	2	(future) 1	–	–	11
I	PPB	4'	–	–	–	–	–	–	4	2	–	–	
J	PPB	4'	–	–	–	–	–	–	4	2	–	–	
K	PPB	4'	–	–	–	–	–	–	6	3	–	–	
L	PPB	4'	–	–	–	–	–	–	6	3	–	–	
M	PPB	4'	–	–	–	–	–	–	8	4	–	–	
N	PPB	4'	–	–	–	–	–	–	8	4	–	–	



POLE & EQUIPMENT NOTES:

1. CONTRACTOR TO SUPPLY ALL SIGNAL INDICATIONS, BRACKETS & ASSEMBLIES.
2. CONTRACTOR TO SUPPLY ALL LUMINAIRE FIXTURES.
3. SEE SHEET 3 OF 3 FOR POLE PLACEMENT DETAILS.

PHASE DIAGRAM



THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

DIG ALERT 800-227-2600 Call 2 Full Working Days In Advance

REGISTERED PROFESSIONAL ENGINEER BRIAN W. GENGLER No. 44730 CIVIL STATE OF CALIFORNIA

NOTES:

1. ALL WORK AND MATERIAL SHALL CONFORM TO CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES(CAMUTCD) 2014, CALTRANS STANDARD PLANS 2014 AND SPECIAL PROVISIONS OF THIS PROJECT.
2. THE CONTRACTOR SHALL ASCERTAIN THE EXACT LOCATION AND DEPTH OF EXISTING PIPES, CONDUITS AND OTHER UNDERGROUND UTILITIES BEFORE USING ANY TOOL OR EQUIPMENT THAT MAY DAMAGE THOSE FACILITIES.
3. THE EXACT LOCATION OF SIGNAL STANDARDS AND APPURTENANCES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
4. PULL BOX ADJACENT TO THE CONTROLLER AND CROSSINGS SHALL BE NO. 6E, ALL OTHER PULL BOXES SHALL BE NO. 5 EXCEPT WHERE SHOWN OTHERWISE OR APPROVED BY THE ENGINEER.
5. TRAFFIC SIGNAL CONDUIT SHALL BE TYPE 3, RIGID NON-METALLIC CONDUIT, SCHEDULE 80 PVC EXCEPT FOR 2" CONDUIT INSTALLED WITHIN CONCRETE STRUCTURES (FOUNDATIONS) AND THE CONDUIT RUN BETWEEN A STRUCTURE AND THE NEAREST PULL BOX SHALL BE TYPE 1, RIGID HOT-DIP GALVANIZED STEEL CONDUIT. MINIMUM CONDUIT DIAMETER ACROSS ROADWAYS SHALL BE 4". MINIMUM DIAMETER FOR ALL OTHER CONDUIT SHALL BE 2", UNLESS OTHERWISE SHOWN OR APPROVED BY THE ENGINEER. CONDUIT FROM PULL BOXES TO POLES WITH MAST ARMS SHALL BE 3" SCHEDULE 80 PVC.
6. ALL SIGNAL HEADS SHALL BE METAL TYPE, PROVIDED WITH METAL LOUVERED BACK PLATES AND METAL VISORS. ALL VEHICULAR INDICATIONS SHALL BE 12" G.E. L.E.D. LEFT TURN HEADS SHALL BE RED, YELLOW & GREEN ARROWS. THE CONTRACTOR SHALL FURNISH ONE SPARE 12" G.E. LED UNIT OF EACH COLOR AND TYPE OF SIGNAL INDICATION SHOWN ON THIS SHEET.
7. PEDESTRIAN SIGNAL INDICATIONS SHALL BE GT1 LED COUNTDOWN PEDISTRIAN SIGNALS. THE CONTRACTOR SHALL FURNISH ONE SPARE GE1 L.E.D. PEDESTRIAN SIGNAL UNIT.
8. THE CONTRACTOR SHALL FURNISH AND INSTALL A POLARA 2-WIRE, ETHERNET ENABLED, ACCESSIBLE PEDESTRIAN SIGNAL SYSTEM PER THE SPECIAL PROVISIONS OR PRE-APPROVED EQUAL.
9. ALL CONDUITS SHALL BE PLACED UNDER EXISTING PAVEMENT BY DRILLING OR JACKING METHOD UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
10. THE CONTRACTOR SHALL FURNISH AND INSTALL CONDUCTORS AND CABLES AS NEEDED TO PROVIDE THE INTENDED SIGNAL OPERATION INCLUDING ETHERNET, VIDEO CABLES, OPTICOM CABLES AND SIGNAL LIGHTING SERVICE WIRES.
11. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SIGNAL INDICATIONS AND LED LUMINAIRE FIXTURES.
12. THE CONTRACTOR SHALL NOTIFY THE CITY OF VICTORVILLE ENGINEERING DEPARTMENT, (760) 955-5158, AT LEAST 48 HOURS PRIOR TO SIGNAL TURN-ON. SIGNAL TURN-ON SHALL BE A MINIMUM OF 48 HOURS PRIOR TO ANY CITY HALL CLOSURE DATE.
13. PANEL SHALL BE PROVIDED FOR VIDEO DETECTION CAMERA CABLES TO BE CONNECTED WITHIN THE CONTROLLER CABINET TO PROVIDE FUSE PROTECTION AND COAX TERMINATION WITH LIGHTNING PROTECTION.
14. I.I.S.N.S. SIGNS SHALL BE TYPE "A". I.I.S.N.S. PANEL LEGENDS SHALL BE PER THE I.I.S.N.S. LEGEND DETAIL THIS SHEET.
15. THE EXACT LOCATION OF DETECTION ZONES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
16. PEDESTRIAN INDICATIONS AND PUSHBUTTONS FOR FUTURE PHASES SHALL BE FURNISHED BUT NOT INSTALLED.
17. A 5 CONDUCTOR CABLE SHALL BE INSTALLED FROM EACH MAS TO THE SV TERMINAL COMPARTMENT.
18. FACTORY AUTHORIZED TECHNICAL SUPPORT SHALL BE PROVIDED FOR TURN ON OF ALL SIGNAL EQUIPMENT.

CONSTRUCTION NOTES:

1. FURNISH AND INSTALL TYPE "R" CABINET, ITERIS VIDEO DETECTION SYSTEM INCLUDING EDGE CONNECT CARD, SPREAD SPECTRUM RADIO SYSTEM, TYPE 90 NEMA CONTROLLER ASSEMBLY, ETHERNET SWITCHES, CONFLICT MONITOR, BATTERY BACKUP SYSTEM WITH BATTERIES (12VDC 41A-HRS), AND OPTICOM PRIORITY CONTROL SYSTEM PER THE CITY OF VICTORVILLE SPECIAL PROVISIONS FOR TRAFFIC SIGNAL CONTROLLER UNITS, CABINETS AND AUXILIARY EQUIPMENT DATED JANUARY 15, 2015.
2. FURNISH AND INSTALL 2" CONDUIT – 2#10 (LUMINAIRE), 2#12 (I.I.S.N.S.).
3. FURNISH AND INSTALL 2" CONDUIT – 3#6 (SERVICE, GFCI, GROUND)
4. FURNISH AND INSTALL TYPE III-BF 120/240V. SERVICE EQUIPMENT ENCLOSURE. PHOTO CELLS AND TEST SWITCHES SHALL BE INTERNAL TO THE SERVICE ENCLOSURE. EXTERIOR COLOR SHALL BE DESERT BEIGE.
5. INSTALL 3" CONDUIT WITH PULL ROPE 100' TO SERVICE PER S.C.E. REQUIREMENTS. CONTRACTOR SHALL CONTACT THE UNDERGROUND DIVISION OF EDISON, A MINIMUM OF 48-HRS IN ADVANCE OF CONSTRUCTION.
6. INSTALL 3" CONDUIT WITH PULL TAPE AND FIBER PULL BOXES FROM CABINET FOR FUTURE USE.
7. FURNISH AND INSTALL OPTICOM SENSOR ON SIGNAL ARM. INSTALLATION TO BE "STRAP METHOD".
8. FURNISH AND INSTALL ITERIS VIDEO DETECTION UNIT ON LUMINAIRE ARM OR ON THE SINAL MAST ARM WITH EXTENSION BRACKET AS DIRECTED BY THE ENGINEER.
9. FURNISH AND INSTALL ETHERNET RADIO W/ ANTENNA ON SIGNAL POLE AS DIRECTED BY THE ENGINEER.
10. I.I.S.N.S. SHALL BE INSTALLED ON A SEPARATE MAST ARM AND SECURED WITH SAFETY CABLES PER THE TECHNICAL REQUIREMENTS OF THE SPECIAL PROVISIONS FOR THIS PROJECT.
11. FURNISH AND INSTALL R9-3A & R9-3B SIGN ON SIGNAL POLE PER THE DIRECTION OF THE ENGINEER.
12. FURNISH AND INSTALL R10-12 SIGN ON SIGNAL MAST ARM PER THE DIRECTION OF THE ENGINEER.
13. FURNISH AND INSTALL R3-4 SIGN ON SIGNAL MAST ARM PER THE DIRECTION OF THE ENGINEER.

I.I.S.N.S. LEGEND DETAIL

SEE POLE AND EQUIPMENT SCHEDULE FOR CORRECT STREET NAMES AND BLOCK NUMBERS

LEGEND:
1. INTERSTATE BLUE BACKGROUND/WHITE LEGENDS 3. 2" UPPER CASE LETTERS
2. 8"UPPER CASE/6"LOWER CASE LETTERS

CITY OF VICTORVILLE
ENGINEERING DEPARTMENT
14343 Civic Drive, Victorville, Ca. 92392 (760) 955-5158

NO.	REVISIONS	BY	DATE

FIELD BOOK NO. (S)

BENCH MARK:

TRAFFIC SIGNAL PLAN
AMETHYST RD @ HOOK BLVD

TRAFFIC SIGNAL DETAILS

DESIGN BY: G.S.H
DRAWN BY: G.S.H.
CHECKED BY: A.W.
DATE: 4-14-15

SHEET NO. 2 OF 6

DRAWING No. S-833

PROJ. No. 2504500-55330-62025

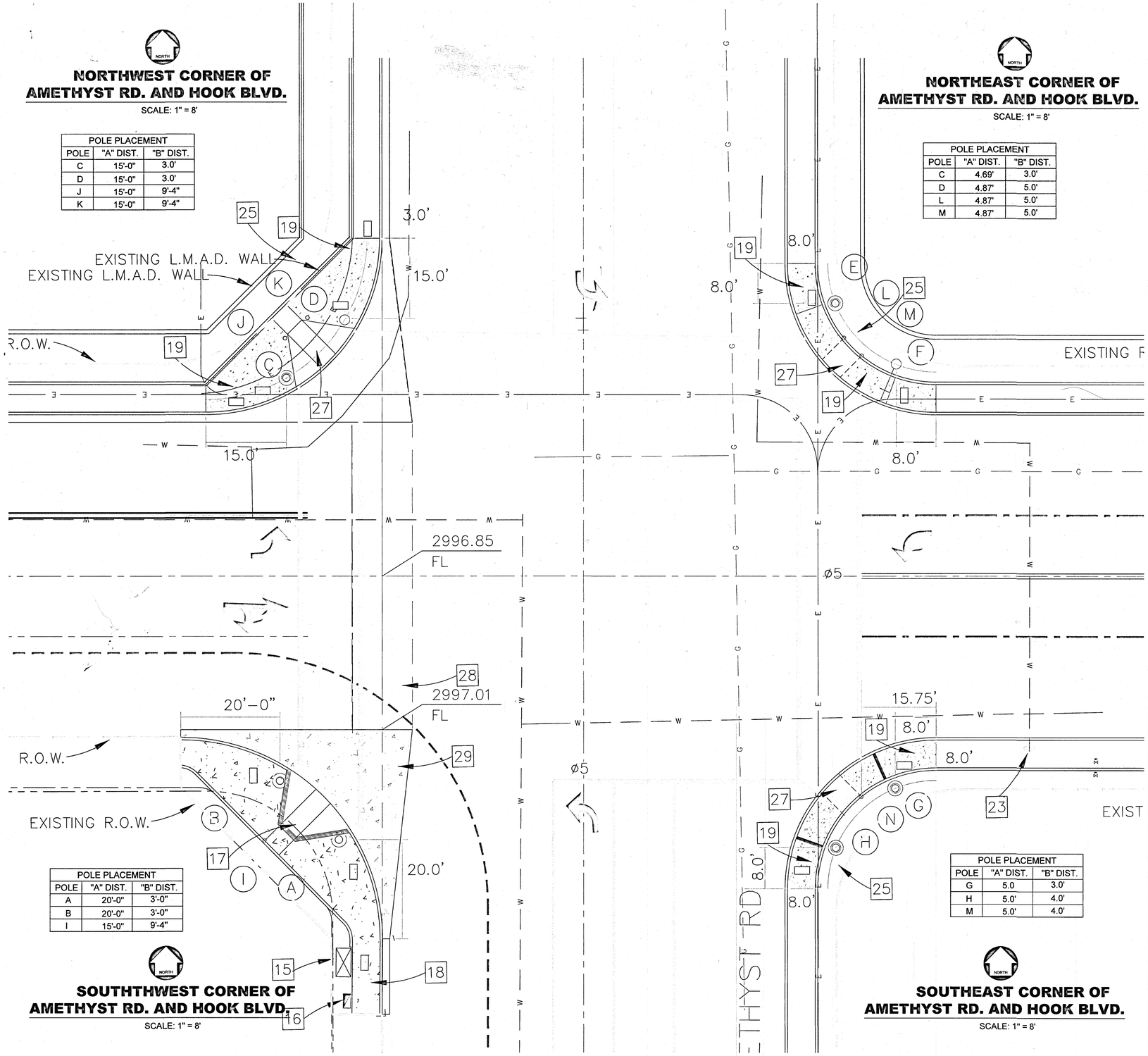
APPROVED BY: CITY ENGINEER Brian W. Gengler DATE: 7-30-15 R.C.E. 44730

Plot Date: 07/23/2015 2:04:23 PM User: Gheidreth File Name: N:\CAD\CIP\Amethyst & Hook Signal\Amethyst @ Hook Signal.dwg Last Update: 7/23/2015 1:39:50 PM

NORTHWEST CORNER OF AMETHYST RD. AND HOOK BLVD.

SCALE: 1" = 8'

POLE PLACEMENT		
POLE	"A" DIST.	"B" DIST.
C	15'-0"	3.0'
D	15'-0"	3.0'
J	15'-0"	9'-4"
K	15'-0"	9'-4"



POLE PLACEMENT		
POLE	"A" DIST.	"B" DIST.
A	20'-0"	3'-0"
B	20'-0"	3'-0"
I	15'-0"	9'-4"

SOUTHTHWEST CORNER OF AMETHYST RD. AND HOOK BLVD.

SCALE: 1" = 8'

NORTHEAST CORNER OF AMETHYST RD. AND HOOK BLVD.

SCALE: 1" = 8'

POLE PLACEMENT		
POLE	"A" DIST.	"B" DIST.
C	4.69'	3.0'
D	4.87'	5.0'
L	4.87'	5.0'
M	4.87'	5.0'

POLE PLACEMENT		
POLE	"A" DIST.	"B" DIST.
G	5.0	3.0'
H	5.0'	4.0'
M	5.0'	4.0'

SOUTHEAST CORNER OF AMETHYST RD. AND HOOK BLVD.

SCALE: 1" = 8'

NOTES:

1. THE EXACT LOCATION OF SIGNAL STANDARDS AND APPURTENANCES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. A MINIMUM CLEARANCE OF 6.0' SHALL BE MAINTAINED BETWEEN ANY PORTION OF A SIGNAL POLE AND ANY OVERHEAD ELECTRICAL POWER TRANSMISSION LINE.
3. THE CONTRACTOR SHALL ASCERTAIN THE EXACT LOCATION AND DEPTH OF EXISTING PIPES, CONDUITS AND OTHER UNDERGROUND UTILITIES BEFORE USING ANY TOOL OR EQUIPMENT THAT MAY DAMAGE THOSE FACITLITIES.

CONSTRUCTION NOTES:

15 CONSTRUCT FOUNDATION FOR TYP "R" CONTROLLER CABINET PER 1999 STD. PLAN ES-3C.

16 CONSTRUCT FOUNDATION FOR TYPE III-B SERVICE EQUIPMENT ENCLOSURE PER 1999 STD. PLAN ES-2E.

17 CONSTRUCT CURB RAMP AS SHOWN PER CITY OF VICTORVILLE STD. SPECIFICATION S-11A WITH CURB AT BACK OF SIDEWALK AS SHOWN.

18 CONSTRUCT SIDEWALK AS SHOWN PER CITY OF VICTORVILLE STD. SPECIFICATION S-04

19 SAW CUT EXISTING SIDEWALK AT THE NEAREST SCORE LINE AS SHOWN TO ACCOMODATE NEW SIGNAL STANDARDS, CONDUITS AND PULL BOXES. RECONSTRUCT SIDEWALK UPON COMPLETION OF SIGNAL INSTALLATION PER CITY OF VICTORVILLE STD. SPECIFICATION S-04.

20 REMOVE AND REPLACE EXISING CURB TO ACCOMODATE CITY OF VICTORVILLE STANDARD S-11A RAMP

21 PROTECT POWER POLE IN-PLACE.

22 PROTECT TELEPHONE PEDESTAL IN-PLACE.

23 PROTECT FIRE HYDRANT IN-PLACE.

24 PROTECT FENCE-WALL IN-PLACE OR REPAIR / REPLACE / RELOCATE.

25 REMOVE / RELOCATE EXISTING LANDSCAPE / IRRIGATION AND OTHER EXISTING ITEMS. RESTORE TO LIKE ORIGINAL CONDITION.

26 RECONSTRUCT EXISTING CURB RAMP UPON COMPLETION OF SIGNAL INSTALLATION.

27 REMOVE AND REPLACE CONCRETE CURB RAMP WITH DETECTABLE WARNING SURFACE PER CALTRANS STANDARD A88A WITH BLUE RAISED TRUNCATED DOME SURFACE.

28 REMOVE 10' PORTION OF EXISTING CROSS GUTTER AND INSTALL PER CITY OF VICTORVILLE STANDARD S-05.

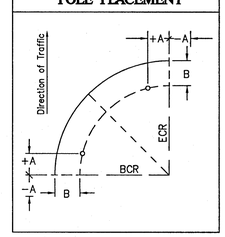
29 INSTALL 12' CONCRETE CROSS GUTTER PER CITY OF VICTORVILLE STANDARD S-05 WITH CURB AND GUTTER AS SHOWN.

LEGEND:

LIMITS OF SIDEWALK INSTALLATION

LIMITS OF SIDEWALK REMOVAL

POLE PLACEMENT



NOTE: For "A" and "B" dimensions, see Pole Placement Schedules.

CITY OF VICTORVILLE
ENGINEERING DEPARTMENT
14343 Civic Drive, Victorville, Ca. 92392 (760) 955-5158

NO.	REVISIONS	BY	DATE

FIELD BOOK NO. (S)

BENCH MARK:
CITY OF VICTORVILLE: V-9
ELEVATION = 2982.32'
LOCATION: 3" BRASS CAP IN CONC. FLUSH WITH SIDEWALK LOCATED AT CURB RETURN NE CORNER OF AMARGOSA RD. AND PALMDALE RD. INTERSECTION.

TRAFFIC SIGNAL PLAN
AMETHYST RD AT HOOK BLVD
POLE PLACEMENT AND DETAILS

DESIGN BY: G.S.H.
DRAWN BY: G.S.H.
CHECKED BY:
DATE: 4-14-15

SHEET NO. 3 OF 6

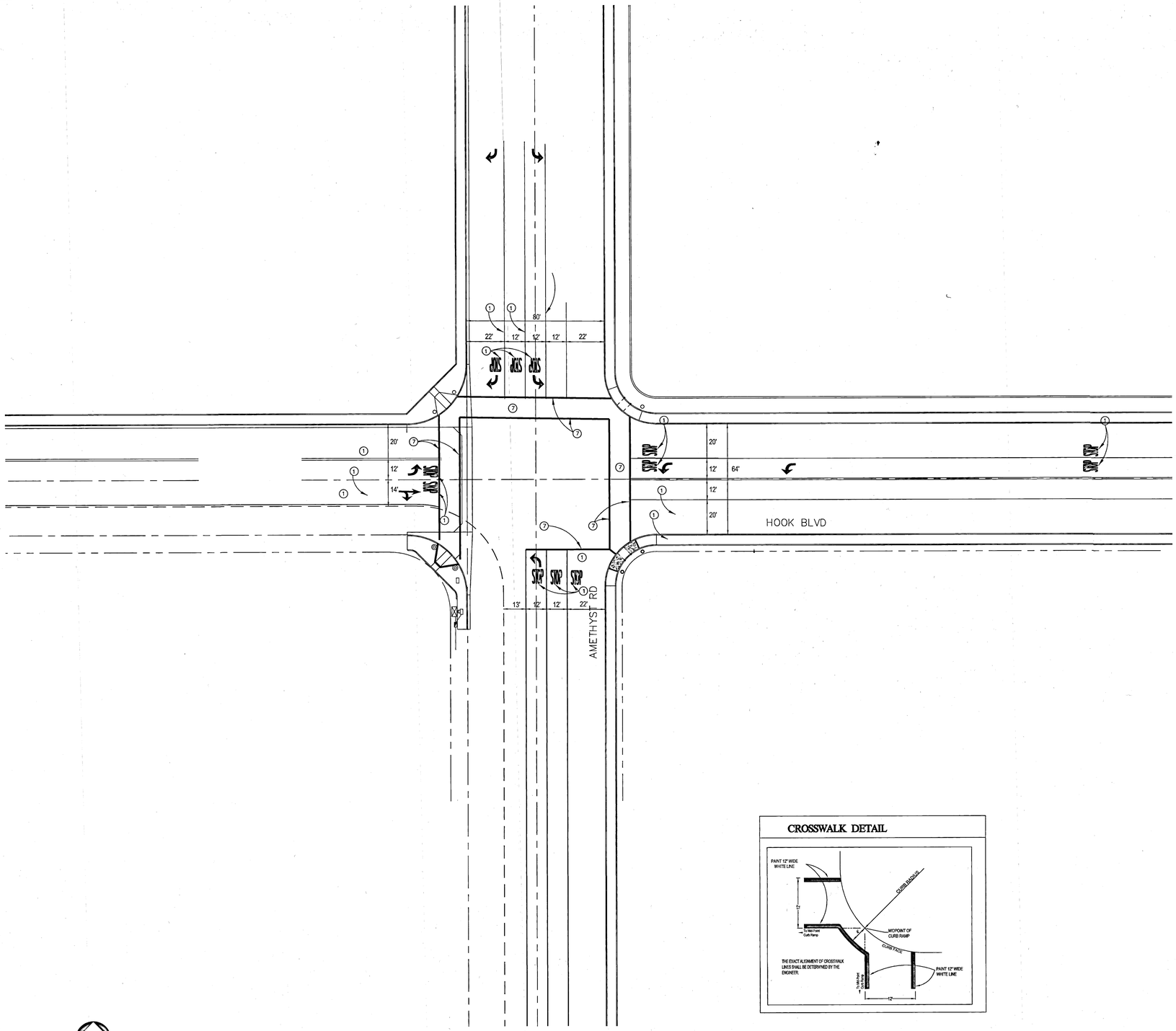
DRAWING No. S-833

PROJ. No. 2504500-55330-62025

APPROVED BY: CITY ENGINEER Brian W. Gengler BRIAN W. GENGLER
DATE: 7-30-15 R.C.E. 44730

REGISTERED PROFESSIONAL ENGINEER BRIAN W. GENGLER No. 44730 CIVIL STATE OF CALIFORNIA

Plot Date: 07/23/2015 3:04:29 PM User: Gheldreth File Name: N:\CAD\CIP\Amethyst & Hook Signal\Amethyst & Hook Signal.dwg Last Update: 7/23/2015 2:46:23 PM



SIGNING AND STRIPING CONSTRUCTION NOTES:

1. REMOVE EXIST STRIPING AND/OR PAVEMENT MARKING BY WET SANBLASTING.
2. PAINT DOUBLE YELLOW – CALTRANS DETAIL 22.
3. PAINT 4" WHITE LANELINE – CALTRANS DETAIL 12.
4. PAINT 8" WHITE CHANNELIZING LINE – CALTRANS DETAIL 38.
5. PAINT 4" RIGHT EDGELINE – CALTRANS DETAIL 27B.
6. PAINT WHITE PAVEMENT MARKING AS SHOWN.
7. PAINT 12" WHITE CROSSWALK OR LIMIT LINE. SEE "CROSSWALK DETAIL"–THIS SHEET.
8. REMOVE AND SALVAGE EXISTING SIGN.
9. FURNISH AND INSTALL NEW SIGN AND POST AS SHOWN.
10. PROTECT EXISTING SIGN IN–PLACE.

SIGNING AND STRIPING GENERAL NOTES:

1. ALL SIGNING, STRIPING, AND PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THE CALIFORNIA MUTCD (DATED SEPTEMBER 26, 2006), STANDARD PLANS AND SPECIFICATIONS (DATED MAY 2006) OF THE CALIFORNIA DEPARTMENT OF TRANSPORTATION AND THE SPECIAL PROVISIONS FOR THIS PROJECT.
2. THE EXACT LOCATION OF SIGNS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. ALL TRAFFIC STRIPING AND PAVEMENT LEGENDS AND RAISED PAVEMENT MARKERS THAT CONFLICT OR CONFUSE TRAFFIC AS A RESULT OF THE NEWLY INSTALLED WORK SHOWN ON THIS SHEET SHALL BE REMOVED.
4. STRIPING AND PAVEMENT LEGENDS SHOWN TO BE REMOVED SHALL BE REMOVED BY WET SANDBLASTING. PAVEMENT MARKERS MAY BE REMOVED BY ANY METHOD THAT DOES NOT DAMAGE THE UNDERLYING PAVEMENT.
5. DEBRIS FROM REMOVAL OPERATIONS SHALL BE CONTAINED WITHIN THE WORK AREA AND THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT PERSONS AND PROPERTY ADJACENT TO THE SANDBLASTING OPERATIONS. THE DEBRIS RESULTING FROM THE SANDBLASTING SHALL BE IMMEDIATELY REMOVED AND DISPOSED OF BY THE CONTRACTOR. DEBRIS WITHIN THE ROADWAY SHALL BE REMOVED BY MECHANICAL SWEEPING OR HIGH POWERED VACUUM.
6. STRIPING LAYOUT SHALL BE APPROVED BY THE CITY ENGINEERING DEPARTMENT PRIOR TO APPLICATION OF PERMANENT PAINT. CONTACT THE ENGINEERING DEPARTMENT AT (760) 955–5158 A MINIMUM OF 48–HOURS PRIOR TO LAYOUT.
7. SALVAGED SIGNS AND SIGN POSTS SHALL BECOME THE PROPERTY OF THE CITY OF VICTORVILLE AND BE DELIVERED TO THE CITY OF VICTORVILLE CORPORATE YARD LOCATED AT 14177 McART RD.

CROSSWALK DETAIL

PAINT 12" WIDE WHITE LINE
CURB FACE
MIDPOINT OF CURB RAMP
CURB FACE
PAINT 12" WIDE WHITE LINE
12'
12'
THE EXACT ALIGNMENT OF CROSSWALK LINES SHALL BE DETERMINED BY THE ENGINEER.

CROSSWALK DETAIL
NOT TO SCALE

NORTH

AMETHYST RD. AND HOOK BLVD.

SCALE: 1" = 30'

REGISTERED PROFESSIONAL ENGINEER
BRIAN W. GENGLER
No. 44730
CIVIL
STATE OF CALIFORNIA

CITY OF VICTORVILLE
ENGINEERING DEPARTMENT
14343 Civic Drive, Victorville, Ca. 92392 (760) 955–5158

NO.	REVISIONS	BY	DATE

FIELD BOOK NO. (S)

TRAFFIC SIGNAL PLAN
AMETHYST RD @ HOOK BLVD
TRAFFIC STRIPING PLAN

BENCH MARK:
CITY OF VICTORVILLE: V–9
ELEVATION = 2982.32'
LOCATION: 3" BRASS CAP IN CONC. FLUSH WITH SIDEWALK LOCATED AT CURB RETURN NE CORNER OF AMARGOSA RD. AND PALMDALE RD. INTERSECTION.

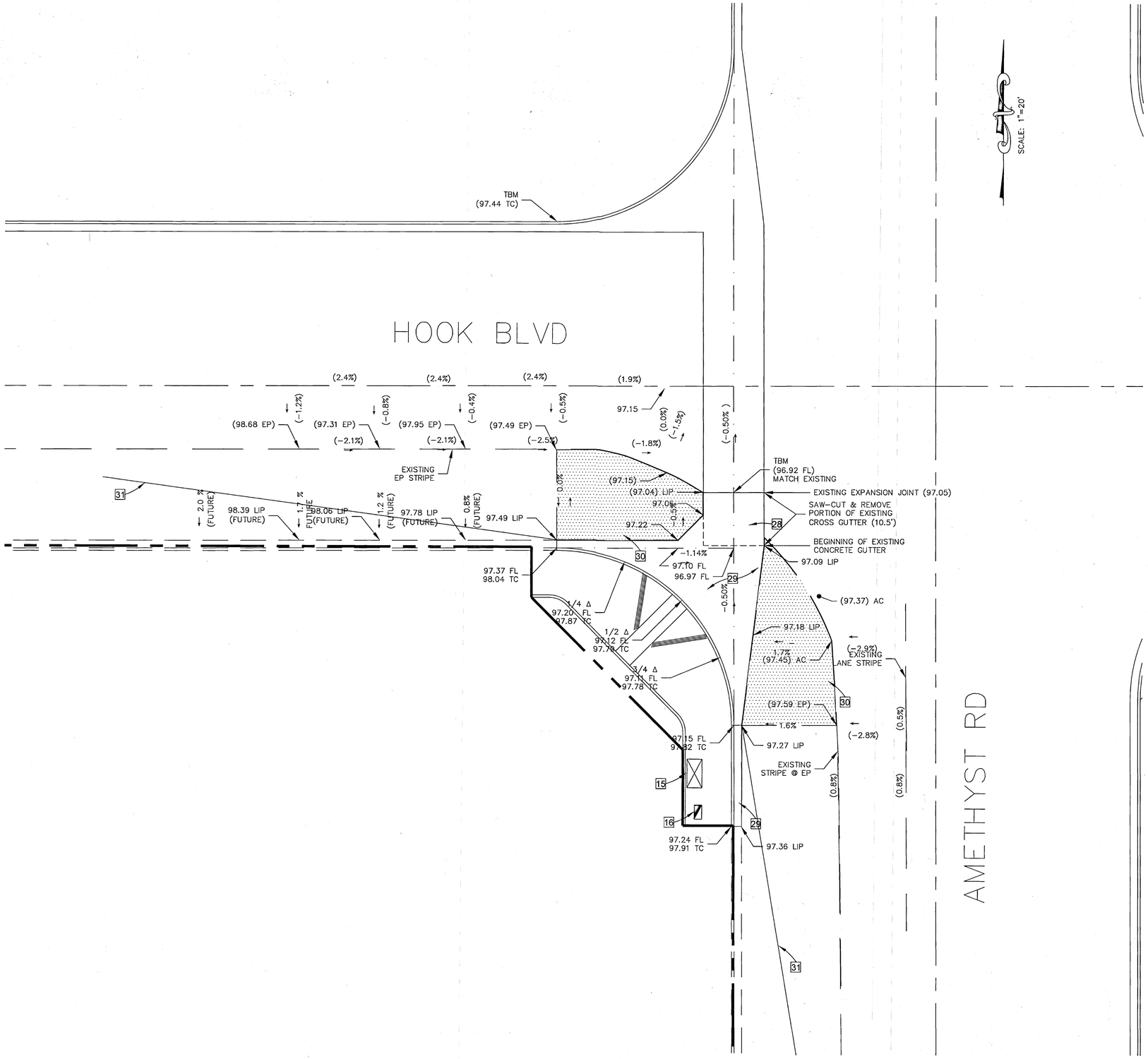
DESIGN BY: G.S.H.
DRAWN BY: G.S.H.
CHECKED BY:
DATE: 4.14.15

SHEET NO. 4 OF 6

DRAWING No. S–833

PROJ. No. 2504500–55330–62025

APPROVED BY: CITY ENGINEER Brian W. Gengler BRIAN W. GENGLER DATE: 7-30-15 R.C.E. 44730



SCALE: 1"=20'

NOTES:

1. THE EXACT LOCATION OF SIGNAL STANDARDS AND APPURTENANCES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. A MINIMUM CLEARANCE OF 6.0' SHALL BE MAINTAINED BETWEEN ANY PORTION OF A SIGNAL POLE AND ANY OVERHEAD ELECTRICAL POWER TRANSMISSION LINE.
3. THE CONTRACTOR SHALL ASCERTAIN THE EXACT LOCATION AND DEPTH OF EXISTING PIPES, CONDUITS AND OTHER UNDERGROUND UTILITIES BEFORE USING ANY TOOL OR EQUIPMENT THAT MAY DAMAGE THOSE FACITLITIES.

CONSTRUCTION NOTES:

15 CONSTRUCT FOUNDATION FOR TYP "R" CONTROLLER CABINET PER 1999 STD. PLAN ES-3C.

16 CONSTRUCT FOUNDATION FOR TYPE III-B SERVICE EQUIPMENT ENCLOSURE PER 1999 STD. PLAN ES-2E.

17 CONSTRUCT CURB RAMP AS SHOWN PER CITY OF VICTORVILLE STD. SPECIFICATION S-11A WITH CURB AT BACK OF SIDEWALK AS SHOWN.

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19 SAW CUT EXISTING SIDEWALK AT THE NEAREST SCORE LINE AS SHOWN TO ACCOMODATE NEW SIGNAL STANDARDS, CONDUITS AND PULL BOXES. RECONSTRUCT SIDEWALK UPON COMPLETION OF SIGNAL INSTALLATION PER CITY OF VICTORVILLE STD. SPECIFICATION S-04.

20 REMOVE AND REPLACE EXISING CURB TO ACCOMODATE CITY OF VICTORVILLE STANDARD S-11A RAMP

21 PROTECT POWER POLE IN-PLACE.

22 PROTECT TELEPHONE PEDESTAL IN-PLACE.

23 PROTECT FIRE HYDRANT IN-PLACE.

24 PROTECT FENCE-WALL IN-PLACE OR REPAIR / REPLACE / RELOCATE.

25 REMOVE / RELOCATE EXISTING LANDSCAPE / IRRIGATION AND OTHER EXISTING ITEMS. RESTORE TO LIKE ORIGINAL CONDITION.

26 RECONSTRUCT EXISTING CURB RAMP UPON COMPLETION OF SIGNAL INSTALLATION.

27 REMOVE AND REPLACE CONCRETE CURB RAMP WITH DETECTABLE WARNING SURFACE PER CALTRANS STANDARD A88A WITH BLUE RAISED TRUNCATED DOME SURFACE.

28 REMOVE 10' PORTION OF EXISTING CROSS GUTTER AND INSTALL PER CITY OF VICTORVILLE STANDARD S-05.

29 INSTALL 12' CONCRETE CROSS GUTTER PER CITY OF VICTORVILLE STANDARD S-05 WITH CURB AND GUTTER AS SHOWN.

30 CONSTRUCT PAVEMENT 4" MINIMUM ASPHALT CONCRETE OVER 6" CLASS II AGGREGATE BASE.

31 GRADE, COMPACT, 8' SHOULDER TO MEET PROPOSED AC PAVEMENT. GRADE DRAINAGE SWALE (1% MIN.).

LEGEND:

LIMITS OF SIDEWALK INSTALLATION

LIMITS OF ASPHALT INSTALLATION

REGISTERED PROFESSIONAL ENGINEER
BRIAN W. GENGLER
No. 44730
CIVIL
STATE OF CALIFORNIA

CITY OF VICTORVILLE
ENGINEERING DEPARTMENT
14343 Civic Drive, Victorville, Ca. 92392 (760) 955-5158

NO.	REVISIONS	BY	DATE

FIELD BOOK NO. (S)

BENCH MARK:
CITY OF VICTORVILLE: V-9
ELEVATION = 2982.32'
LOCATION: 3" BRASS CAP IN CONC. FLUSH WITH SIDEWALK LOCATED AT CURB RETURN NE CORNER OF AMARGOSA RD. AND PALMDALE RD. INTERSECTION.

TRAFFIC SIGNAL PLAN
AMETHYST RD AT HOOK BLVD
POLE PLACEMENT AND DETAILS

DESIGN BY: G.S.H.
DRAWN BY: G.S.H.
CHECKED BY:
DATE: 4-14-15

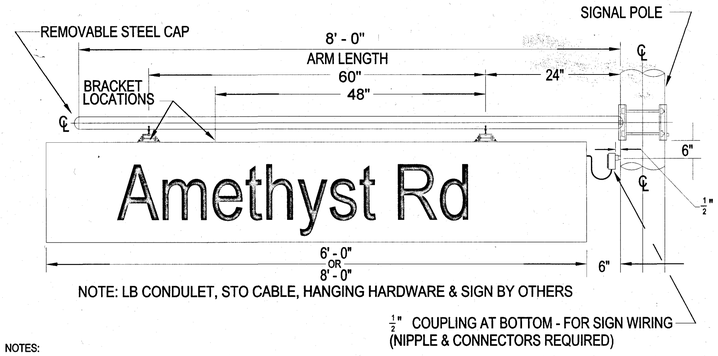
SHEET NO. 5 OF 6

DRAWING No. S-833

PROJ. No. 2504500-55330-62025

APPROVED BY: CITY ENGINEER Brian W. Gengler BRIAN W. GENGLER DATE: 7-30-15 R.C.E. 44730

Plot Date: 07/29/2015 4:49:11 PM User: Gheldreth File Name: N:\CAD\CIP\Amethyst & Hook Signal\Amethyst @ Hook Signal.dwg Last Update: 7/23/2015 3:27:25 PM



NOTE: LB CONDULET, STO CABLE, HANGING HARDWARE & SIGN BY OTHERS

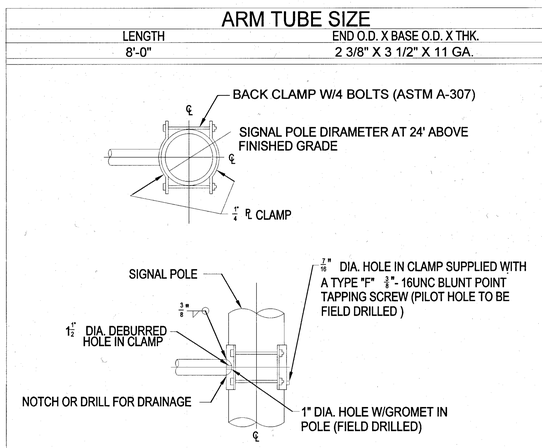
1/2" COUPLING AT BOTTOM - FOR SIGN WIRING (NIPPLE & CONNECTORS REQUIRED)

NOTES:

1. BOTH LOWER MOUNTING ASSEMBLIES SHALL HAVE A SAFETY CABLE INSTALLED.
2. MANUFACTURE EACH SAFETY CABLE FROM ONE CONTINUOUS LENGTH OF 1/8" BRAIDED ZINC COATED STEEL CABLE.
3. UPPER SAFETY CABLE LOOP AROUND MAST ARM SHALL BE ON THE UPPER SIDE OF CLAMP. SECURE UPPER SAFETY CABLE LOOP TO CLAMP WITH A WIRE TIE.
4. LOWER SAFETY CABLE LOOP SHALL BE INSTALLED BETWEEN LOWER MOUNTING ASSEMBLY AND SIGN FRAME.
5. INSTALL 1/8" DOUBLE ALUMINUM FERRULE ON UPPER AND LOWER LOOP ENDS. EACH FERRULE SHALL BE CRIMPED WITH AWG 1 DIE.
6. INSTALLED SAFEY CABLE SHALL NOT ALLOW SIGN TO FALL IN EXCESS OF ONE INCH.

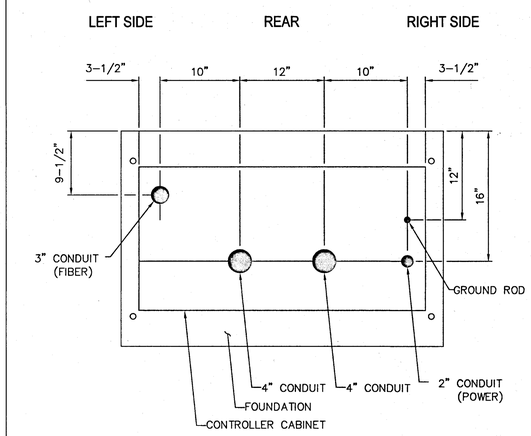
DESIGN BY: gheldreth	CITY OF VICTORVILLE	SCALE: NOT TO SCALE
DRAWN BY: GH		
CHECK BY: JR	I.I.S.N.S. HORIZONAL MAST ARM	SHEET 1 OF 4
APP BY: BG		
DATE: 4/25/13		

ARM TUBE SIZE	
LENGTH	END O.D. X BASE O.D. X THK.
8'-0"	2 3/8" X 3 1/2" X 11 GA.


BACK CLAMP W/4 BOLTS (ASTM A-307)
SIGNAL POLE DIRAMETER AT 24' ABOVE FINISHED GRADE
1/4" CLAMP
SIGNAL POLE
7/16" DIA. HOLE IN CLAMP SUPPLIED WITH A TYPE "F" 3/8"- 16UNC BLUNT POINT TAPPING SCREW (PILOT HOLE TO BE FIELD DRILLED)
1 1/2" DIA. DEBURRED HOLE IN CLAMP
3/8"
NOTCH OR DRILL FOR DRAINAGE
1" DIA. HOLE W/GROMET IN POLE (FIELD DRILLED)

CLAMP DETAIL

DESIGN BY: GHeldreth	CITY OF VICTORVILLE	SCALE: NOT TO SCALE
DRAWN BY: GH		
CHECK BY: JR	I.I.S.N.S. MAST ARM TUBE SIZE	SHEET 2 OF 4
APP BY: BG		
DATE: 4/24/13		



TRAFFIC SIGNAL CONTROLLER/CABINET
FOUNDATION LAYOUT DETAIL
PER CITY OF VICTORVILLE STANDARD PLAN
N.T.S.

NOTES:

1. BOTH LOWER MOUNTING ASSEMBLIES SHALL HAVE A SAFETY CABLE INSTALLED.
2. MANUFACTURE EACH SAFETY CABLE FROM ONE CONTINUOUS LENGTH OF 1/8" BRAIDED ZINC COATED STEEL CABLE.
3. UPPER SAFETY CABLE LOOP AROUND MAST ARM SHALL BE ON THE UPPER SIDE OF CLAMP. SECURE UPPER SAFETY CABLE LOOP TO CLAMP WITH A WIRE TIE.
4. LOWER SAFETY CABLE LOOP SHALL BE INSTALLED BETWEEN LOWER MOUNTING ASSEMBLY AND SIGN FRAME.
5. INSTALL 1/8" DOUBLE ALUMINUM FERRULE ON UPPER AND LOWER LOOP ENDS. EACH FERRULE SHALL BE CRIMPED WITH AWG 1 DIE.
6. INSTALLED SAFEY CABLE SHALL NOT ALLOW SIGN TO FALL IN EXCESS OF ONE INCH.

DESIGN BY: Mike Falken	CITY OF VICTORVILLE	SCALE: NOT TO SCALE
DRAWN BY: MF/GH		
CHECK BY: JR	I.I.S.N.S. SAFETY CABLE	SHEET 3 OF 4
APP BY: BG		
DATE: 4/25/13		

GENERAL NOTES

MATERIAL SPECIFICATIONS	
SHAFT	Steel of 48,000 psi minimum yeild after fabricaiton
BASE PLATES & FLANGES	ASTM A-35 Steel ASTM A-36 Steel
PIPE	ASTM A-36–53 Grade "B" Steel
MATERIAL SPECIFICATIONS	
BUTT WELDS	Ground flush with base metal
LONGITUDINAL WELDS	All welds shall conform to AWS D1.1 weld specification
FINISH COATING	
STRUCTURE	Hot dip galvanized per ASTM A-123
HARDWARE	Hot dip galvanized per ASTM A-153
DESIGN CRITERIA	
STRUCTURE & HARDWARE	In accordance with the "Specification for Structrual Supports of Highway Signs, Luminaires and Traffic Signals. AASHTO 1994
WELDING	In accordance with the "Specification for Structrual Supports of Highway Signs, Luminaires and Traffic Signals. AASHTO 1994

DESIGN BY: gheldreth	CITY OF VICTORVILLE	SCALE: NOT TO SCALE
DRAWN BY: GH		
CHECK BY: JR	I.I.S.N.S. HORIZONAL MAST ARM (notes)	SHEET 4 OF 4
APP BY: BG		
DATE: 4/25/13		

DIG ALERT
800-227-2600
Call 2 Full Working Days In Advance

REGISTERED PROFESSIONAL ENGINEER
BRIAN W. GENGLER
No. 44730
CIVIL
STATE OF CALIFORNIA

CITY OF VICTORVILLE
ENGINEERING DEPARTMENT
14343 Civic Drive, Victorville, Ca. 92392 (760) 955-5158

NO.	REVISIONS	BY	DATE

TRAFFIC SIGNAL PLAN
AMETHYST RD AT HOOK BLVD
I.I.S.N.S. MAST ARM DETAILS

FIELD BOOK NO. (S)

BENCH MARK:
CITY OF VICTORVILLE: V-9
ELEVATION = 2982.32'
LOCATION: 3" BRASS CAP IN CONC. FLUSH WITH SIDEWALK LOCATED AT CURB RETURN NE CORNER OF AMARGOSA RD. AND PALMDALE RD. INTERSECTION.

DESIGN BY: G.S.H.
DRAWN BY: G.S.H.
CHECKED BY:
DATE: 4-15-15

SHEET NO. 6 OF 6

DRAWING No. S-833
PROJ. No. 2504500-55330-62025

APPROVED BY: CITY ENGINEER Brian W. Gengler BRIAN W. GENGLER
DATE: 7-30-15 R.C.E. 44730

Plot Date: 07/23/2015 3:25:14 PM User: Gheldreth File Name: N:\CAD\CIP\Amethyst & Hook Signal\Amethyst @ Hook Signal.dwg Last Update: 7/23/2015 3:08:22 PM

SECTION D

SUBMITTAL FORMS

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D - SUBMISSION CERTIFICATION

I hereby submit to the City of Victorville the following bid proposal for work outlined in plans and specifications entitled **FOXBOROUGH DEMOLITION.** All of the following documents (check below) are completed, fully executed, and included in my bid as required in the bid documents:

_____Submission Certification (Page D-1)

_____Proposal Instruction (Page D-2)

_____The Proposal (Page D-3,4)

_____Public Contract Code Section 10162 Questionnaire (Page D-5)

_____Bidder's Bond (10% of the Bid Amount) Cash or Cashier's Check (Page D-6)

_____Bid Proposal (Page D-7-8)

_____List of Subcontractors (Page D-9-10)

_____Non-Collision Affidavit (Page D-11)

_____Addenda Acknowledgement (Page D-12)

_____Proposer Identification (Page D-13)

_____Customer References (Page D-14)

_____Contractor's Qualification (Page D-15-16)

_____Exception Form (Page D-17)

_____Workers Compensation (Page D-18)

_____SB 854 Certification (D-19)

_____Debarred Certification Acknowledgement (D-20-21)

My signature on this submittal Certification is affirmation that all items listed above are fully completed and executed and are hereby submitted with proposal as required. I understand that failure to complete and/or submit any of the required documents may be cause for rejection of my bid proposal.

_____ _____
Authorized Signature Printed Name and Title

_____ _____
Date Signed Telephone Number

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D – PROPOSAL INSTRUCTION

Bids are required for the entire work. The amount of the bid for comparison purposes will be the total of all items.

The bidder shall set forth for each item of work, in clearly printed figures, the unit price and total for the line item in the respective spaces provided for this purpose. In the case of unit basis items, the amount set forth under the "Total" column shall be the product of the unit price bid and the estimated quantity for the item.

In case of discrepancy between the unit price and the total set forth for a unit basis item, the unit price shall prevail, except as provided in (a) or (b), as follows:

(a) If the amount set forth as a unit price is unreadable or otherwise unclear, or is omitted, or is the same amount as the entry in the item total column, then the amount set forth in the item total column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price;

(b) (Decimal Errors) If the product of the entered unit price and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc. from the entered total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentage-wise the unit price or item total in the City's Final Estimate of cost.

If both the unit price and the item total are unreadable or otherwise unclear, or are omitted, the bid may be deemed irregular. Likewise if the item total for a lump sum item is unreadable or otherwise unclear, or is omitted, the bid may be deemed irregular unless the project being bid has only a single item and a clear, readable total bid is provided.

Symbols such as commas and dollar signs will be ignored and have no mathematical significance in establishing any unit price or item total or lump sums. Written unit prices, item totals and lump sums will be interpreted according to the number of digits and, if applicable, decimal placement. Cents symbols also have no significance in establishing any unit price or item total since all figures are assumed to be expressed in dollars and/or decimal fractions of a dollar. Bids on lump sum items shall be item totals only; if any unit price for a lump sum item is included in a bid and it differs from the item total, the items total shall prevail.

The foregoing provisions for the resolution of specific irregularities cannot be so comprehensive as to cover every omission, inconsistency, error or other irregularity, which may occur in a bid. Any situation not specifically provided for will be determined in the discretion of the City, and that discretion will be exercised in the manner deemed by the City to best protect the public interest in the prompt and economical completion of the work. The decision of the City with respect to the amount of a bid, or the existence or treatment of an irregularity in a bid, shall be final.

If this Proposal shall be accepted and the undersigned shall fail to contract as aforesaid and to give the two (2) bonds in the sums to be determined, with surety satisfactory to the City of Victorville within ten (10) days, not including Sundays and legal holidays, after award of the Contract by the City of Victorville may, at its option, determine the bidder has abandoned the Contract, and thereupon this Proposal and the acceptance thereof shall be null and void and the forfeiture of such security accompanying this Proposal shall operate and the same shall be the property of the City of Victorville.

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D - THE PROPOSAL

CITY OF VICTORVILLE
14343 Civic Drive
Victorville, CA 92392

SUBJECT: CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

Gentlemen:

The undersigned hereby proposes to perform all work for which a contract may be awarded to him and to furnish any and all plant, labor services, materials, tools equipment, supplies, transportation, utilities, and all other items and facilities necessary therefore as provided in the Contract Documents, and to do everything required therein for the **Construction of Improvements** as specifically set for in documents entitled: "TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.**"** together with appurtenances thereto; all as set forth on the Plans and in these Special Provisions and other contract Documents; and he further proposes and agrees that, upon proposal acceptance and award, he will contract in the form and manner stipulated to perform all the work called for by the Plans, Special Provisions, and other Contract Documents, and to complete all such work in strict conformity therewith within the time limits set forth therein, and he will accept as full payment therefor the prices set forth in the Bid Proposal forming a part hereof.

( ) Cashier's Check ( )Certified Check ( ) Bid Bond properly made payable to the CITY OF VICTORVILLE**,** hereinafter designated as the Owner, for the sum of _____ _____ Dollars, ($_____), which amount is not less than ten percent (10%) of the total amount of this bid, is attached hereto and is given as a guarantee the undersigned will execute the Agreement and furnish the required bonds if awarded the Contract and, in case of failure to do so within the time provided, said funds shall be forfeited to the Owner, of Surety's liability to the Owner for forfeiture of the amount of the Bond shall be considered as established.

IT IS UNDERSTOOD AND AGREED THAT:

1. The undersigned has carefully examined all the Contract Documents which will form a part of the Contract; namely, Notice Inviting Bids, Instruction to Bidders, Proposal, Bid Proposal, list of Subcontractors, the Bidder's Bond with Check or Bond, Construction Agreement, Faithful Performance Bond, Payment Bond, Non-Collusion Affidavits, Special Provisions, the plans, the City of Victorville Standard Specifications for Public Improvements, the Standard Specifications and Standard Plans of the State of California Department of Transportation, California Manual on Uniform Traffic Control Devices for Streets and Highways, and all additions, deletions, modifications, appendices, and all addenda as prepared prior to the date of bid opening setting forth any modifications or interpretations of said documents; and

2. The undersigned has by investigation at the site of the work and otherwise satisfied himself concerning the nature and location of the work and has fully informed himself concerning all conditions and matters which can in any way affect the work or the cost thereof; and

3. The undersigned fully understands the scope of the work and has carefully checked all words and figures in this Proposal and he further understands the CITY OF VICTORVILLE will in no way be responsible for any errors or omissions in the preparation of this Proposal; and

4. The undersigned will execute the Contract and furnish the required Performance and Payment Bonds and proof of insurance coverage within ten (10) days (not including Sundays and legal holidays) after notice to him of acceptance of his bid by the CITY OF VICTORVILLE; and further, that this bid may not be withdrawn for a period of forty-five (45) days after date set for opening thereof, unless otherwise required by law. If any

bidder withdraws his bid within said period, the bidder shall be liable under the provisions of Bidders Bond, or the Contract and his Surety shall be liable under the Bidder's Bond, as the case may be; and

5. The undersigned hereby certifies this Proposal is genuine and not sham or collusive or made in the interest or in behalf of any person not herein named, and the undersigned has not directly or indirectly induced or solicited any other bidder to put in a sham bid, or any other person, firm, or corporation to refrain from bidding, the undersigned has not in any manner sought by collusion to secure for himself an advantage over any other bidder; and

6. In conformance with current statutory requirements of Section 1860 of the Labor Code of the State of California, the undersigned confirms the following as his certification:

   I am aware of the provisions of Section 3700 of the Labor Code, which requires every employer to be insured against liability for workman's compensation or to undertake self-insurance in accordance with the provisions before commencing the performance of the work of this Contract.

NOW, in compliance with Notice Inviting Bids, and all the provisions herein before stipulated, the undersigned, with full cognizance thereof, hereby proposes to perform the entire work for the prices set forth in the attached Bid Proposal sheet(s) upon which award of Contract is made.

DATED this _____ day of _____, 2015

BIDDER: _____

BY: _____

TITLE: _____

BIDDER'S ADDRESS: _____

_____

BIDDER'S TELEPHONE NUMBER: _____

BIDDER'S EMAIL ADDRESS: _____

CONTRACTORS' LICENSE NUMBER AND EXPIRATION DATE: _____

CONTRACTORS' LICENSE CLASSIFICATION(S): _____

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D - QUESTIONNAIRE

In accordance with Government code Section 14310.5, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the Bidder, any officer of the Bidder, or any employee of the Bidder who has a proprietary interest in the Bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a Federal, State, or local government project because of a violation of law or a safety regulation?

Yes ____ No ____

If the answer is yes, explain the circumstances in the following space:

NOTE: *This questionnaire constitutes a part of the Proposal and signature on the signature portion of this Proposal shall constitute signature of this questionnaire.*

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D – BIDDER'S BOND

TO ACCOMPANY BID PROPOSAL FORM

KNOW ALL MEN BY THESE PRESENTS,

THAT WE, _____, as Principal, and _____, as Surety, are held and firmly bound unto the CITY OF VICTORVILLE in the sum of TEN PERCENT (10%) of the total amount of the bid of the Principal, to be paid to the City, for which payment, well and truly to be made, we bind ourselves, our heirs, executors, and administrators, successors, or assignees, jointly and severally, firmly by the presents.

In no case shall the liability of the Surety hereunder exceed the sum of $_____.

THE CONDITION OF THIS OBLIGATION IS SUCH.

THAT, WHEREAS the Principal has submitted a bid to CITY OF VICTORVILLE for the certain construction for which bids are to be opened at Office of the City Clerk of the CITY OF VICTORVILLE on **SEPTEMBER 22, 2015 at 2:30 p.m**., as shown on Plans entitled **CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.**

NOW THEREFORE, if the aforesaid Principal is awarded the Contract, and within the time and manner required under the said Special Provisions, enters into a written Contract, in the prescribed form, in accordance with the bid and files the two (2) required Bonds with the CITY OF VICTORVILLE, one (1) to guarantee faithful performance and one (1) to guarantee payment for labor and materials as required by law, then this obligation shall be null and void; otherwise, it shall be and remain in full force and virtue.

In the event suit is **brought upon this Bond by the City and judgment is recovered, the Surety shall pay all costs incurred by the City in** such suite, including reasonable attorney's fee to be fixed by the Court.

Accompanying this Proposal is ( ) $ _____ Cash, ( ) Cashier's Check, ( ) Certified Check, ( ) Bidder's Bond in the amount equal to at least ten percent (10%) of the total bid.

THE UNDERSIGNED further agrees that in case of default in executing the required Contract together with the necessary bonds within the period of time provided by the Proposal requirements, the proceeds of the security accompanying this bid shall become the property of City of Victorville, California, and this Proposal and the acceptance thereof may be considered null and void.

Principal is licensed in the State of California in accordance with an act providing for the registration of contractors. License No. _____.

_____ (Seal)

By: _____ (Seal)

_____ (Seal)
PRINCIPAL

_____ (Seal)

By: _____ (Seal)
SURETY

_____
ADDRESS

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D – BID PROPOSAL FORM

TO THE CITY COUNCIL OF THE CITY OF VICTORVILLE, CALIFORNIA:
The undersigned declares he has carefully examined the locations of the proposed work, the Plans, Special Provisions, and Contract Documents; and being familiar with all of the conditions surrounding the work, including the availability of materials and labor, here by proposes to furnish all labor, materials, tools, equipment, and incidentals, to complete all the work. All of the aforementioned shall be done in accordance with said Plans, Special Provisions, and the most current editions, including all amendments at bid opening of the:

1) City of Victorville Standard Specifications for Public Improvements,
2) Standard Specifications and the Standard Plans of the State of California Department of Transportation,
3) California Manual of Uniform Traffic Control Devices, and Contract Documents for the price set forth in the following schedule:

ITEM	***DESCRIPTION***	***APP. QTY***	***UNIT***	***ESTIMATED UNIT PRICE***	***TOTAL ESTIMATED PRICE***
1	Traffic signal installation per sht 2&3	1	LS		
2	Construct Class II base per Sht 5	100	Ton		
3	Construct 3" or 4" thick AC pavement per Sht 5	100	Ton		
4	Sawcut, remove & dispose exit 8" C & G per Sht 3	40	LF		
5	Const City Std S-01 8" C& G per Sht 3 & 5	200	LF		
6	Const City Std S-11A curb ramp per Sht 3	2	EA		
7	Const modified City Std S-11A curb ramp per Sht 3	2	EA		
8	Const City Std S-04 4" sidewalk per Sht 3	1500	SF		
9	Const City Std S-05 Concrete cross gutter to include 8" curb from BCR to existing for 44' street width per Sht 5	1	LS		
10	Sandblast exist STOP legend per Sht 4	14	EA		
11	Sandblast exist Type IV arrow per Sht 4	6	EA		
12	Sandblast exist 12" stop bar per Sht 4	600	LF		
13	Sandblast exist 4" striping per Sht 4	800	LF		
14	Install 8" white line (Detail 38) per Sht 4	400	LF		
15	Install double yellow line (Detail 22) per Sht 4	200	LF		
16	Install 4" white lane line (Detail 12) per Sht 4	220	LF		
17	Install 4" white edge line (27B) per Sht 4	800	LF		
18	Paint 12" white x-walk line or limit line per Sht 4	800	LF		
19	Install Type IV arrow per Sht 4	10	EA		
20	Remove & salvage exist sign & post per Sht 4	8	EA		
21	Remove & relocate exist sign & post per Shts 4	5	EA		
22	Furnish & install new sign & post per Shts 4	10	EA		
23	Furnish & install delineator	10	EA		
24	Replace turf, plants, irrigation lines and sprinklers per Sht 2&3	1	LS		
25	Storm Water Pollution Prevention Program	1	LS		
26	Mobilization	1	LS		
27	Traffic Control	1	LS		
				Total	

TOTAL BID FROM LINE #1 – LINE #7: $_____

TOTAL BID IN WORDS:_____

Contractor:_____

Address:_____

Phone:_____Fax:_____

Email Address:_____

By:_____

Signature Date:

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D – LIST OF SUBCONTRACTORS

The bidder is required to furnish the following information in accordance with the provisions of Section 4100 to 4113, inclusive, of the Public Contract Code of the State of California.

==========

Name of Subcontractor: _____

State & License Number: _____

Address of Subcontractor: _____

Percent (%) of Total Contract: _____%

Specific Description of Subcontract: _____

DIR Registration No._____

==========

Name of Subcontractor: _____

State & License Number: _____

Address of Subcontractor: _____

Percent (%) of Total Contract: _____%

Specific Description of Subcontract: _____

DIR Registration No._____

==========

Name of Subcontractor: _____

State & License Number: _____

Address of Subcontractor: _____

Percent (%) of Total Contract: _____%

Specific Description of Subcontract: _____

DIR Registration No._____

==========

Name of Subcontractor: _____

State & License Number: _____

Address of Subcontractor: _____

Percent (%) of Total Contract: _____%

Specific Description of Subcontract: _____

DIR Registration No._____
==========

Name of Subcontractor: _____

State & License Number: _____

Address of Subcontractor: _____

Percent (%) of Total Contract: _____%

Specific Description of Subcontract: _____

DIR Registration No._____
==========

Name of Subcontractor: _____

State & License Number: _____

Address of Subcontractor: _____

Percent (%) of Total Contract: _____%

Specific Description of Subcontract: _____

DIR Registration No._____
==========

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D – NON-COLLUSION AFFIDAVIT

STATE OF CALIFORNIA }
COUNTY OF }
}

_____, being first duly sworn, deposes, and say he, they_

_____
(sole owner, partner, president, secretary, etc.)

of _____, the party making the foregoing bid; that such bid is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization, or corporation; that such bid is genuine and not collusive or sham; that said bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, nor that anyone shall refrain from bidding; that said bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of said bidder or of any other bidder; nor to fix any overhead profit, or cost element of such bid price, nor that of any other bidder; nor to secure any proposed contract; that all statements contained in such bid are true. And further, that said bidder has not directly or indirectly submitted his bid price or any breakdown thereof, nor paid and will not pay fees in connection therewith to any corporation partnership, company, association, organization, bid depository, not to any member or agent thereof, nor to any other individual except to such person or persons as have a partnership or other financial interest with said bidder in his general business.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of _____

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20____, by _____ proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

(Seal) Signature_____

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D – ADDENDA ACKNOWLEDGMENT

The undersigned acknowledges receipt of the following ADDENDA and the cost, if any, or such revision has been included in the TOTAL BID of the Bidding Schedule(s). If NONE, WRITE "NONE" ON THE FIRST LINE **(PLEASE SUBMIT THE SIGNED ADDENDUM FORM ALONG WITH THIS SHEET)**

ADDENDA NO. _____ DATED _____

ADDENDA NO. _____ DATED _____

ADDENDA NO. _____ DATED _____

ADDENDA NO. _____ DATED _____

NAME OF BIDDER _____

ADDRESS _____

TELEPHONE NO. _____

STATE LICENSE NO. AND CLASSIFICATION: _____

LICENSE EXPIRATION DATE: _____

By: _____
Signature

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D – PROPOSER IDENTIFICATION

1. Legal name of Proposer: _____

2. Street Address: _____

3. Mailing Address: _____

4. Business Telephone: _____

5. Facsimile Telephone: _____

6. Email Address: _____

7. Type of Business:

   ☐ Sole Proprietor ☐ Partnership ☐ Corporation

   Other: _____

   If corporation, indicate State where incorporated: _____

8. Business License number issued by the City where the Proposer's principal place of business is located.

   Number: _____ Issuing City: _____

9. Federal Tax Identification Number: _____

10. Proposer's Project Manager: _____

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D – CUSTOMER REFERENCES

Bidder: _____

LIST FOUR (4) YOU HAVE DONE BUSINESS WITH WITHIN THE LAST THREE YEARS – PREFERABLY PUBLIC AGENCIES		
1.	Name of Agency	
	Address	
	Contact Person Name:	
	Contact Person Phone:	
	Email Address:	
2.	Name of Agency	
	Address	
	Contact Person Name:	
	Contact Person Phone:	
	Email Address:	
3.	Name of Agency	
	Address	
	Contact Person Name:	
	Contact Person Phone:	
	Email Address:	
4	Name of Agency	
	Address	
	Contact Person Name:	
	Contact Person Phone:	
	Email Address:	

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D – CONTRACTOR'S QUALIFICATION STATEMENT

Required in advance of consideration of application to bid or as a qualification statement in advance of award of contract. Approved and recommended by the American Institute of Authorized City Representatives and The Associated General Contractors of America.

The undersigned certifies under oath the truth and correctness of all statements and of all answers to questions made hereinafter.

SUBMITTED TO:

Corporation	___
Partnership	___
Individual	___
Joint Venture	___
Other	___

SUBMITTED BY:
NAME:
ADDRESS:
PRINCIPAL OFFICE:

(Note: Attach separate sheets as required)

1.0 How many years has your organization been in business as a general contractor?

2.0 How many years has your organization been in business under its present business name?

3.0 If a corporation answer the following:

- 3.1 Date of incorporation:
- 3.2 State of incorporation:
- 3.3 President's name:
- 3.4 Vice-president's name(s):
- 3.5 Secretary's or Clerk's name:
- 3.6 Treasurer's name:

4.0 If individual or partnership, answer the following:

4.1 Date of organization:
4.2 Name and address of all partners. (State whether general or limited partnership.):
5.0 If other than corporation or partnership, describe organization and name principals:

6.0 We normally perform _____% of the work with our own forces. List trades below:

7.0 Have you ever failed to complete any work awarded to you? If so, note when, where, and why:

8.0 List name of project, City, Authorized City Representative, contract amount, percent complete and schedule completion of the major construction projects your organization has in process on this date:

9.0 List the name of project, City, Authorized City Representative, contract amount, date of completion, percent of work with own forces of the major projects your organization has completed in the past five years:

10.0 Name of bonding company and name and address of agent:

11.0 Dated at_____

this _____ day of _____, 20 _____

Name of organization:_____

By: _____

Title:_____

12.0 M_____, being duly sworn deposes and

says that he (she) is the _____, of Contractor(s) and that answers to the foregoing questions and all statements therein contained are true and correct.

Subscribed and sworn before me this _____ day of _____, 20_____.

Notary Public:

My commission expires:

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D – EXEMPTION FORM

Should Proposer take exception to **ANY** of the terms and conditions or other contents provided in the "Request for Proposal," list the exceptions below. **THIS COMPLETED FORM MUST BE RETURNED WITH YOUR PROPOSAL.** If no exception(s) are taken, enter ***"NONE"*** for the first item. *(Make additional copies of this form as necessary)*

Page Number: _____ Section Title: _____

Paragraph Number: ____ Exception Taken: _____

_____

_____

_____

Page Number: ____ Section Title: _____

Paragraph Number: ____ Exception Taken: _____

_____

_____

_____

Page Number: ____ Section Title: _____

Paragraph Number: ____ Exception Taken: _____

_____

_____

_____

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D - WORKERS' COMPENSATION CERTIFICATE

The Proposer shall execute the following form as required by the California Labor Code, Sections 1860 and 1861:

> I am aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and on behalf of my firm, I will comply with such provisions before commencing the performance of the services of any contract entered into.

_____	_____
Signature	Company Name
_____	_____
Printed Name	Business License Number
_____	_____
Title	Date

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D SENATE BILL 854

(http://www.dir.ca.gov/Public-Works/PublicWorks.html)

Senate Bill 854 signed into law on June 20, 2014, became effective immediately. It established a new public works contractor registration program which will collect fees to fund compliance monitoring and enforcement, determine prevailing wage and public works coverage, and hear enforcement appeals.
All contractors and subcontractors intending to bid or perform work on public works projects will be required to register, and annually renew, online for the program. The annual cost to register for the program is currently $300.00 and is non-refundable. This is a Department of Industrial Relations (DIR) fee paid to the State of California. The City of Victorville will not register a contractor/subcontractor, nor collect funds for registration.
Contractors or subcontractors submitting bids must be registered by March 1, 2015. The requirement to use only registered contractors and subcontractors on public works projects, greater than $1,000.00 applies to all projects awarded on or after April 1, 2015. No bid can be accepted nor any contract or subcontract entered into nor purchase order issued without proof that the contractor or subcontractor is registered.
If you intend to bid or provide services on City projects in the future, please ensure you are registered with the DIR prior to March 1, 2015. Effective immediately, the City will be required to fill out a form alerting the DIR of the services you are providing the City. Detailed information is required to complete this form. You may be asked to provide information needed to complete the DIR form. You will be asked to complete this in a timely manner to avoid interruption in the services you are providing.

Are you currently registered with the DIR?

Yes____ **No**____ If yes, what is your registration number? _____
(please submit proof of your registration)

Bidder:_____ Federal I.D. No:_____

Address:_____

Phone:_____Fax:_____Email:_____

Signature:_____Date:_____

Name Printed:_____Title:_____

CITY OF VICTORVILLE
CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

SECTION D – DEBARRED CERTIFICATION ACKNOWLEDGEMENT

(a)(1) The Offeror/Bidder certifies, to the best of its knowledge and belief, that—

(i) The Offeror/Bidder and/or any of its Principals—

(A) Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have not, within a three-year period preceding this solicitation, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) contract or subcontract; violation of Federal or State antitrust statutes relating to the submission of bids; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating Federal criminal tax laws, or receiving stolen property;

(C) Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision;

(ii) The Offeror/Bidder has not, within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principal," for the purposes of this certification, means an officer, director, owner, partner, or a person having primary management or supervisory responsibilities within a business entity (*e.g.*, general manager; plant manager; head of a division or business segment; and similar positions).

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

(b) The Offeror/Bidder shall provide immediate written notice to the City if, at any time prior to contract award, the Offeror/Bidder learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's/Bidder's responsibility. Failure of the Offeror/Bidder to furnish a certification or provide such additional information as requested by the City may render the Offeror/Bidder nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror/Bidder is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror/Bidder knowingly rendered an erroneous certification, in addition to other remedies available to the City, the City may terminate the contract resulting from this solicitation for default.

The Offeror/Bidder certifies that the foregoing is true and correct:

Offeror/Bidder:_____Federal I.D. No:_____

Address:_____

Phone:_____Fax:_____Email:_____

Signature:_____Date:_____

Name Printed:_____Title:_____

SECTION E

CONTRACT DOCUMENTS

CONSTRUCTION AGREEMENT
BY AND BETWEEN
THE CITY OF VICTORVILLE
AND
NAME OF CONTRACTOR

CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST & HOOK BLVD.

THIS CONSTRUCTION AGREEMENT (the "Agreement") is made and entered into by and between the City of Victorville, a municipal corporation located in the County of San Bernardino, State of California, hereinafter referred to as the "City", and (Name of Contractor), a General Contractor, hereinafter referred to as the "Contractor". The City and the Contractor are sometimes hereinafter referred to as a "Party" or as the "Parties".

RECITALS:

WHEREAS, **NAME OF PROJECT** requires **DESCRIBE SERVICES** (the "Project"); and

WHEREAS, in light of the facts set forth above, the City desires to retain Contractor in connection with **DESCRIBE PROJECT**

NOW, THEREFORE, IN CONSIDERATION OF THE COVENANTS, CONDITIONS, AND PROMISES CONTAINED HEREIN AND FOR SUCH OTHER GOOD AND VALUABLE CONSIDERATION, THE PARTIES HERETO AGREE AS FOLLOWS:

Section 1. **RECITALS.**

The Recitals set forth above are true and correct and are hereby incorporated into this Agreement by this reference, as though set forth herein.

Section 2. **TERM.**

This Agreement shall commence on _____ (the "Commencement Date") and shall terminate upon completion of the Project _____ (the "Termination Date"), unless sooner terminated in accordance with the provisions of this Agreement (the "Term").

Section 3. **CONTRACT DOCUMENTS; PRIORITY.**

The contract documents shall include the following documents (as maybe applicable), attached hereto as exhibits and incorporated herein by this reference as though set forth in full (the "Contract Documents"):

- This Agreement.
  Exhibits:
- Notice Inviting Bids for the Project;

- Bid Proposal Form(s) for the Project;
- City Specifications for the Project;
- Special Provisions; and
- Accepted Proposal.

In the event of any conflict between or among the Contract Documents, or any dispute as to the meaning of any term or provision, the Contract Documents shall be given priority according to the order listed herein above. In the event of any conflict or dispute that cannot be resolved by reference to the Contract Documents, the following documents may be used to clarify or interpret any term therein:

- Non-Collusion Affidavit;
- Bidder's Bond;
- List of Subcontractors;
- Faithful Performance Bond;
- Payment Bond;
- Certification re Previous Contracts; and
- Guaranty.

Section 4. CONTRACTOR'S OBLIGATIONS.

Contractor shall complete the Project as specifically set forth in the Contract Documents. Contractor shall furnish, at its own cost and expense, all labor, services, material, tools, equipment, supplies, transportation, and any other items and facilities necessary therefore, as provided in the Contract Documents.

Section 5. COMPENSATION.

The Contractor agrees to receive and accept the following amount; **Spell out in words the Contract Amount ($0000.00),** as full compensation for furnishing; all materials, doing all the work contemplated and embraced in this contract, all loss or damage arising out of the nature of the work aforesaid, the action of the elements, any unforeseen difficulties or obstructions which may arise or be encountered in the execution of the work until its acceptance by the City of Victorville, and for all risks of every description connected with the work, all expenses incurred by or in consequence of the suspension or discontinuance of work well and faithfully completing the whole work, thereof, according to the Plans and Specifications, and requirements of **(INSERT DEPT. HEAD NAME AND TITLE),** or his designee to wit: SEE EXHIBIT "A" BID PROPOSAL

Section 6. PAYMENT SCHEDULE.

The City shall pay Contractor as provided in the Payment Schedule, attached hereto as Exhibit (__), (as maybe applicable) and incorporated herein by this reference as thought set forth in full, subject to approval of the City, when applicable.

Section 7. PERFORMANCE SCHEDULE.

Contractor shall complete the Project in accordance with the Contract Documents.

Section 8. **PREVAILING WAGES**

The contractor and sub-contractor shall comply with all federal regulations and guidelines required in the performance of this contract. Copies of the updated Wage Determination rate are on file at the City of Victorville Finance Department and shall be made available to any interested party, on request or can be obtained by visiting www.wdol.gov. Notwithstanding anything in the Contract Documents to the contrary, Contractor shall be responsible for using up-to-date wage rates.

Section 9. **WORKERS' COMPENSATION INSURANCE.**

Contractor shall procure and maintain, at its own expense, during the Term of this Agreement, workers' compensation insurance, providing coverage as required by the California State Workers' Compensation Law. If any class of employees employed by Contractor is not protected by the California State Workers' Compensation Law, Contractor shall provide adequate insurance for the protection of such employees to the satisfaction of the City.

In conformance with current statutory requirements of Section 1860 et seq., of the Labor Code of the State of California, the undersigned confirms the following as their certification:

I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions before commencing the performance of the work of this contract.

Section 10. **NOTICE TO PROCEED.**

No work, service, material, or equipment shall be performed or furnished under this Contract unless and until a Notice to Proceed has been given to the Contractor by the City. Contractor shall commence work pursuant to the Contract Documents as directed by the City in the Notice to Proceed, and to diligently execute the same to completion within the time limits set forth in the Contract Documents.

Section 11. **COMPLIANCE WITH LAWS.**

Contractor shall comply with all local, state, and federal laws and regulations applicable to the services required hereunder, including any rule, regulation, or bylaw governing the conduct or performance of Contractor or its employees, officers, or board members.

Section 12. **COMPREHENSIVE GENERAL AND AUTOMOBILE LIABILITY INSURANCE.**

Contractor shall procure and maintain at its own expense, during the term of this Agreement, comprehensive general liability insurance, of not less than One Million Dollars ($1,000,000) per occurrence, and Two Million Dollars ($2,000,000) in the aggregate, for bodily injury, personal injury, death, loss, or damage resulting from the wrongful or negligent acts by the Contractor or its officers, employees, servants, volunteers, and agents and independent contractors. Course of Construction insurance form providing coverage for "all risks" of loss.

Contractor shall further procure and maintain, at its own expense, during the Term of this Agreement, commercial vehicle liability insurance covering personal injury and property damage, of not less than One Million Dollars ($1,000,000) Combined Single Limit, covering any vehicle(s) utilized by Contractor or its officers, employees, servants, volunteers, or agents and independent contractors in performing the services required by this Agreement.

Section 13. ADDITIONAL NAMED INSURED.

Notwithstanding any inconsistent statement in any required insurance policies or any subsequent endorsements attached thereto, the protection offered by all policies, except for Workers' Compensation coverage, shall bear an endorsement whereby it is provided that, the City and its officers, employees, servants, volunteers, and agents and independent contractors, including, without limitation, the City Attorney, are named as Additional Insured's.

Section 14. WAIVER OF SUBROGATION RIGHTS.

Contractor shall require the carriers of all required insurance policies to waive all rights of subrogation against the City and its officers, volunteers, employees, contractors, and subcontractors. Each policy of insurance shall be endorsed to reflect such waiver.

Section 15. PROOF OF INSURANCE COVERAGE; REQUIRED PRIOR TO COMMENCEMENT OF SERVICES.

a. Contractor shall secure from a good and responsible company or companies authorized to do insurance business in the State of California the policies of insurance required by this Agreement and furnish to the City Clerk certificates of said insurance at least one (1) day prior to the commencement of any services to be performed under this Agreement.

b. The certificates of insurance shall bear an endorsement whereby it is provided that, in the event of cancellation or amendment of any required insurance policy for any reason whatsoever, the City shall be notified by mail, postage prepaid, not less than thirty (30) days before the cancellation or amendment is effective. In the case of non-payment, ten (10) days' advance written notice shall be given.

c. The certificates of insurance shall bear an endorsement whereby it is provided that the respective insurance policy shall not be terminated or expire without first providing thirty (30) days written notice to the City of such termination or expiration.

d. The certificates of insurance shall indicate that the respective insurance policy will be maintained throughout the Term, and (if applicable during any Option Period) of this Agreement.

e. The Comprehensive General Liability and vehicle liability policies shall be endorsed to contain the following provision: "For any claims related to this Contract, Contractor's service coverage shall be primary with respect to the City. Any insurance maintained by the City shall be in excess of Contractor's insurance and shall not contribute to it.

Section 16. TIME OF THE ESSENCE.

Time is of the essence in the performance of this Agreement.

Section 17. **INDEMNIFICATION.**

Notwithstanding the limits of any insurance, Contractor shall indemnify the City, its officials, officers, agents, volunteers and employees against, and will hold and save them and each of them harmless from, any and all actions, suits, claims, damages to persons or property, losses, costs, penalties, obligations, errors, omissions or liabilities, (herein "claims or liabilities") that may be asserted or claimed by any person, firm or entity arising or alleged to arise out of or in connection with the negligent performance of the work, operations or activities of Contractor, its agents, employees, subcontractors, or invitees, provided for herein, or arising or alleged to arise from the negligent acts or omissions of Contractor hereunder, or arising or alleged to arise from Contractor's negligent performance of or failure to perform any term, provision, covenant or condition of this Agreement, but excluding such claims or liabilities or portion of such claims or liabilities arising or alleged to arise from the negligence or willful misconduct of the City its officials, officers, agents, volunteers or employees, and in connection therewith:

(a) Contractor will defend any action or actions filed in connection with any of said claims or liabilities and will pay all costs and expenses, including legal costs and attorneys' fees incurred in connection therewith;

(b) Contractor will promptly pay any judgment rendered against the City, its officials, officers, agents or employees for any such claims or liabilities arising or alleged to arise out of or in connection with Contractor's (or its agents', employees', subcontractors' or invitees') negligent performance of or failure to perform such work, operations or activities hereunder; and Contractor agrees to save and hold the City, its officials, volunteers, officers, agents, and employees harmless there from;

(c) In the event the City, its officials, officers, agents, volunteers or employees is made a party to any action or proceeding filed or prosecuted against Contractor for such damages or other claims arising or alleged to arise out of or in connection with the negligent performance of or failure to perform the work, operation or activities of Contractor hereunder, Contractor shall pay to the City, its officials, volunteers officers, agents or employees, any and all costs and expenses incurred by the City, its officers, agents or employees in such action or proceeding, including but not limited to, legal costs and attorneys' fees for counsel acceptable to City.

(d) Contractor's duty to defend and indemnify as set out in this Section shall include any claims, liabilities, obligations, losses, demands, actions, penalties, suits, costs, expenses or damages or injury to persons or property arising or alleged to arise from, in connection with, as a consequence of or pursuant to any state or federal law or regulation regarding hazardous substances, including but not limited to the Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA"), Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), Resource Conservation and Recovery Act of 1976 ("RCRA"), the Hazardous and Solid Waste Amendments of 1984, the Hazardous Material Transportation Act, the Toxic Substances control Act, the Clean Air Act, the Clean Water Act, the California Hazardous Substance Account Act, the California Hazardous Waste Control Law or the Porter-Cologne Water Quality Control Act, as any of those statutes may be amended from time to time.

The Contractor's indemnification obligations pursuant to this Section shall survive the termination of this Agreement. Contractor shall require the same indemnification from all subcontractors.

Section 18. **REPORTS.**

Upon request by **(DEPT HEAD),** or his designee, Contractor shall prepare and submit reports concerning Contractor's performance of the services required by this Agreement.

Section 19. **RECORDS.**

a. Contractor shall keep such books and records as shall be necessary to perform the services required by this Agreement and enable the **(DEPT. HEAD),** or his designee to evaluate the cost and the performance of such services.

b. Books and records pertaining to costs shall be kept and prepared in accordance with generally accepted accounting principals.

c. The **(DEPT. HEAD)** or his designee shall have full and free access to such books and records at all reasonable times, including the right to inspect, copy, audit, and make records and transcripts from such records.

d. Records and supporting documents pertaining to the use of funds paid to Contractor hereunder shall be retained by Contractor and made available to the **(DEPT HEAD)** or his designee or his designee for purposes of performing an audit for a period of five (5) years from the date of termination of this Agreement.

Section 20. **MODIFICATIONS AND AMENDMENTS.**

This Agreement may be modified or amended only by a written instrument signed by both parties.

Section 21. **ENTIRE AGREEMENT.**

a. This Agreement supersedes any and all prior or contemporaneous agreements, either oral or written, between the City and Contractor with respect to the subject matter of this Agreement.

b. The Contract Documents contain all of the covenants and agreements between the parties with respect to the subject matter herein, and each party acknowledges that no representations, inducements, promises, or agreements have been made by or on behalf of any party, except those covenants and agreements in this Agreement and the Contract Documents.

c. No agreement, statement, or promise with respect to the subject matter of the Contract Documents, which is not contained in the Contract Documents, or in a valid modification or amendment to the Contract Documents, shall be valid or binding on either party.

Section 22. **AMBIGUITIES.**

This Agreement is in all respects intended by each party hereto to be deemed and construed to have been jointly prepared by the parties and the parties hereby expressly agree

that any uncertainty or ambiguity existing herein shall not be interpreted against either of them. Except as expressly limited by this paragraph, all of the applicable rules of interpretation of contract shall govern the interpretation of any uncertainty or ambiguity of this Agreement.

Section 23. NOTICES.

Any notice to be provided pursuant to this Agreement shall be in writing, and all such notices shall be delivered by personal service or by deposit in the United States mail, certified or registered, return receipt requested, with postage prepaid, and addressed to the parties as follows:

To the City:	**Dept. Head** **Name of Department** **City of Victorville** **14343 Civic Center Drive** **Victorville, CA 92392**
To Contractor:	**Name of Contractor** **Address** **State and Zip Code**

b. Notices, payments, and other documents shall be deemed delivered upon receipt by personal service or as of the second (2nd) day after deposit in the United States mail.

Section 24. NON-LIABILITY OF CITY OFFICERS AND EMPLOYEES.

No officer or employee of the City shall be personally liable to Contractor, or any successor in interest, in the event of any default or breach by the City or for any amount, which may become due to Contractor or to its successor(s), or for any breach of any obligation of the terms of this Agreement.

Section 25. REVIEW BY ATTORNEYS.

Each party hereto has had its attorneys review this Agreement and all related documents. Each party hereto has consulted with its attorneys and has negotiated the terms of this Agreement based on such consultation.

Section 26. CARE OF WORK.

The performance of services by Contractor or the payment of money by the City shall not relieve Contractor from any obligation to correct any incomplete, inaccurate, or defective work at no further cost to the City, when such inaccuracies are due to the negligence of Contractor.

Section 27. CAPTIONS AND HEADINGS

The captions and headings contained in this Agreement are provided for identification purposes only and shall not be interpreted to limit or define the content of the provisions described under the respective caption or heading.

Section 28. SUCCESSORS, HEIRS, AND ASSIGNS.

Except as otherwise expressly provided herein, this Agreement shall be binding upon the successors, endorsees, assigns, heirs, and personal representatives of each of the parties to this Agreement and, likewise, shall inure to the benefit of the successors, endorsees, assigns, heirs, and personal representatives of each of the parties.

Section 29. GENDER; PLURAL.

In this Agreement, unless the context clearly requires otherwise, the masculine, feminine and neuter genders and the singular and the plural shall include one another.

Section 30. SEVERABILITY.

If any one or more of the sentences, clauses, paragraphs, or sections contained herein is declared invalid, void, or unenforceable by a court of competent jurisdiction, the same shall be deemed severable from the remainder of this Agreement and shall not affect, impair, or invalidate any of the remaining sentences, clauses, paragraphs, or sections contained herein.

Section 31. GOVERNING LAW.

The validity of this Agreement and any of its terms or provisions, as well as the rights and duties of the parties under this Agreement, shall be construed pursuant to and in accordance with California law.

Section 32. CUMULATIVE REMEDIES

Except with respect to rights and remedies expressly declared to be exclusive in this Agreement, the rights and remedies of the parties are cumulative and the exercise by either party of one or more of such rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same default of any other default by the other party.

Section 33. VENUE.

All proceedings involving disputes over the terms, provisions, covenants, or conditions contained in this Agreement and all proceedings involving any enforcement action related to this Agreement shall be initiated and conducted in the applicable court or forum in San Bernardino County, California.

Section 34. ATTORNEY'S FEES.

Should any litigation, specifically including but not limited to, arbitration and other non-judicial resolution of disputes be commenced between the parties to this agreement concerning this agreement or the rights and duties of either in relation thereto, the parties prevailing in such litigation or other proceeding shall be entitled, in addition to such other relief as may be granted, to a reasonable sum as and for attorney fees in such litigation where the proceeding which, if not agreed upon by the parties, shall be determined by the court or other entity in which such litigation or other proceeding is brought.

Section 35. EFFECTIVENESS OF AGREEMENT.

This Agreement shall not be binding upon the City, until signed by the authorized representative(s) of Contractor, approved by the City's Risk Manager, and executed by the **(DEPT. HEAD)** of the City.

Section 36. REPRESENTATIONS OF PARTIES AND PERSONS EXECUTING AGREEMENT.

(a) Each of the parties to this Agreement hereby represents that all necessary and appropriate actions of their governing bodies have been taken to make this Agreement a binding obligation of each of the parties hereto.

(b) The persons executing this Agreement warrant that they are duly authorized to execute this Agreement on behalf of and bind the parties each purports to represent.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed as of the dates written below.

THE CITY OF VICTORVILLE

By:_____
Mayor

Dated:_____

Contractor: (Awarded contractor)

CSLB #:_____

By:_____

Name:_____

Title:_____

ATTEST:

By:_____
Carolee Bates, City Clerk

Approved as to STANDARD Form:

By:_____
Andre de Bortnowsky, City Attorney

CITY OF VICTORVILLE

By:_____
Chuck Buquet, Risk Manager

Dated:_____

CITY OF VICTORVILLE

CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST AND HOOK BLVD.
FAITHFUL PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT WE, _____, hereinafter referred to as "Contractor," as principal, and , as Surety, are held and firmly bond unto the CITY OF VICTORVILLE, in the sum of _____ _____ Dollars, ($_____), lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, jointly and severally, firmly by these presents. The conditions of the foregoing obligation is such that:

WHEREAS, said Contractor has been awarded and is about to enter into the annexed contract with said CITY OF VICTORVILLE for completion of **" CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST AND HOOK BLVD."** as specifically set forth in documents entitled **" CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST AND HOOK BLVD. PROJECT"**and is required under the terms of the Contract to give this bond in connection with the execution of said Contract;

NOW, THEREFORE, if the said Contractor shall well and truly do and perform all of the covenants and obligations of said Contract on its part to be done and performed at the times and in the manner specified herein, then its obligation shall be null and void, otherwise, it shall be and remain in full force and effect;

PROVIDED, that any alterations in the work to be done, or the material to be furnished, which may be made pursuant to the terms of said Contract, shall not in any way release either the Contractor or the Surety thereunder, nor shall any extensions of time that may be granted under the provision of said Contract release either the Contractor or the Surety, and notice of such alterations or extensions of the Contract is hereby waived by the Surety.

WITNESS our hands this _____ day of _____ ,_____.

(SEAL)

CONTRACTOR

_____

_____
SURETY

By:_____

By:_____

Title:_____

NOTE: Signature of the party executing for the Surety must be properly acknowledged.

CITY OF VICTORVILLE

CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST AND HOOK BLVD. PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT WE,_____, hereinafter referred to as "Contractor," as principal, and , as Surety, are held and firmly bound unto the CITY OF VICTORVILLE, in the sum of _____ Dollars ($_____), lawful money of the United States of America, for the payment of which sum well and truly be made, we bind ourselves, jointly and severally, firmly by these presents. The condition of the foregoing obligation is such that:

WHEREAS, said Contractor has been awarded and is about to enter into the annexed contract with said CITY OF VICTORVILLE for completion of **" CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST AND HOOK BLVD. PROJECT"** as specifically set forth in documents entitled **" CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST AND HOOK BLVD. PROJECT"** and is required under the terms of the Contract to give this bond in connection with the execution of said Contract.

NOW, THEREFORE, if the said Contractor or any of its subcontractors fails to pay any of the persons named in Section 3181 of the Civil Code of the State of California, or amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such person for or about the performance of the aforementioned contract, said Surety will pay the same, in an amount not exceeding the sum specified in this bond, and also, in case suit is brought upon the bond, a reasonable attorney's fee to be fixed by the Court. This bond shall insure to the benefit of any and all persons named in Section 3181 of the Civil Code of the State of California so as to give a right of action to such persons or their assignees in any suit brought upon this bond. This bond shall be subject to and include all of the provisions of Title 15 of Part 4 of Division 3 of the Civil Code of the State of California relating to Payment Bond for Public Works, including but not confined to, Civic Code Section 3225-3228, inclusive, and Section 3247-3252, inclusive.

PROVIDED, that any alterations in the work to be done, or the material to be furnished, which may be made pursuant to the terms of said contract, shall not in any way release either the Contractor or the Surety thereunder, nor shall any extensions of time granted under the provisions of said Contract release either the Contractor or the Surety, and notice of such alterations or extensions of the Contract is hereby waived by the Surety.

WITNESS our hands this ___ day of _____,_____.

(SEAL) CONTRACTOR

_____ _____

SURETY

By:_____ By:_____

Name_____

Title:_____

CITY OF VICTORVILLE

CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST AND HOOK BLVD. GUARANTY

TO THE CITY OF VICTORVILLE, CALIFORNIA

The undersigned guarantees the completion of **" CC16-020 TRAFFIC SIGNAL AND STREET IMPROVEMENT AT AMETHYST AND HOOK BLVD. PROJECT".** Should any of the materials or equipment prove defective or should the work as a whole prove defective, due to faulty workmanship, material furnished, or methods of installation, or should the work or any part thereof fail to operate properly as originally intended and in accordance with the Plans and Specifications and/or manufacturers specifications, due to any of the above causes, all within twelve (12) months after date on which this Contact is accepted by the City, the undersigned agrees to reimburse the City, upon demand, for its expenses incurred in restoring said work to the condition contemplated in said project, including the cost of any such equipment or materials replaced and the cost of removing and replacing any other work necessary to make such replacement or repairs, or, upon demand by the City, to replace any such materials and to repair said work completely without cost to the City so that said work will function successfully as originally contemplated.

The City shall have the unqualified option to make any needed replacements or repairs itself or to have such replacements or repairs done by the undersigned.

In the event the City elects to have said work performed by the undersigned, the undersigned agrees that the repairs shall be made and such materials as are necessary shall be furnished and installed within the time limit designated by the City. If the undersigned shall fail or refuse to comply with their obligations under this guaranty, the City shall be entitled to all costs and expenses, including attorney's fees, reasonably incurred by reason of said failure or refusal.

SIGNED: _____
CONTRACTOR

By:_____ Title:_____

Dated this _____ day of _____ ,_____.

NOTE: This Guaranty shall be executed by the successful bidder in accordance with instructions in the Special Provisions. The bidder may execute the Guaranty on this page at the time of submitting the bid.

EXHIBIT A
PAYROLL FORMS

PAYROLL INSTRUCTIONS

In order to expedite the review of payrolls, below is the information Purchasing needs to properly perform our review.

- Original signed certified payroll WH-347;
- Current Wage Determination;
- Correct Classification (has to match the Employee Info Sheet)
- Employee Information Sheet (original signed – One Time Form)
- Daily Sign-In Sheets (original signed)
- Fringe Benefit Statement (if noted that the fringe is paid to others);
- Statement of Non-Performance for days workers do not work within the payroll week;
- If the payroll is not in agreement with the current wage determination, the contractor will be asked to provide corrected payrolls and proof of restitution. Proof must include the front and back of deposited check.

California
Department of
Industrial Relations

PUBLIC WORKS PAYROLL REPORTING FORM

Page _____ of _____

NAME OF CONTRACTOR:
OR SUBCONTRACTOR:

CONTRACTOR'S LICENSE NO.:
SPECIALITY LICENSE NO.:

ADDRESS:

PAYROLL NO.:

FOR WEEK ENDING:

SELF-INSURED CERTIFICATE NO.:

WORKERS' COMPENSATION POLICY NO.:

PROJECT OR CONTRACT NO.:

PROJECT AND LOCATION:

(1) NAME, ADDRESS AND SOCIAL SECURITY NUMBER OF EMPLOYEE	(2) NO. OF WITH-HOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	(4) DAY	M	T	W	TH	F	S	S	(5) TOTAL HOURS	(6) HOURLY RATE OF PAY	(7) GROSS AMOUNT EARNED		(8) DEDUCTIONS, CONTRIBUTIONS AND PAYMENTS							(9) NET WGS PAID FOR WEEK	(9) CHECK NO.
				DATE																			
				HOURS WORKED EACH DAY																			
			S										THIS PROJECT	ALL PROJECTS	FED. TAX	FICA (SOC. SEC.)	STATE TAX	SDI	VAC/ HOLIDAY	HEALTH & WELF.	PENSION		
			O												TRAING.	FUND ADMIN	DUES	TRAV/ SUBS.	SAVINGS	OTHER*	TOTAL DEDUC-TIONS		
			S										THIS PROJECT	ALL PROJECTS	FED. TAX	FICA (SOC. SEC.)	STATE TAX	SDI	VAC/ HOLIDAY	HEALTH & WELF.	PENSION		
			O												TRAING.	FUND ADMIN	DUES	TRAV/ SUBS.	SAVINGS	OTHER*	TOTAL DEDUC-TIONS		
			S										THIS PROJECT	ALL PROJECTS	FED. TAX	FICA (SOC. SEC.)	STATE TAX	SDI	VAC/ HOLIDAY	HEALTH & WELF.	PENSION		
			O												TRAING.	FUND ADMIN	DUES	TRAV/ SUBS.	SAVINGS	OTHER*	TOTAL DEDUC-TIONS		
			S										THIS PROJECT	ALL PROJECTS	FED. TAX	FICA (SOC. SEC.)	STATE TAX	SDI	VAC/ HOLIDAY	HEALTH & WELF.	PENSION		
			O												TRAING.	FUND ADMIN	DUES	TRAV/ SUBS.	SAVINGS	OTHER*	TOTAL DEDUC-TIONS		
			S										THIS PROJECT	ALL PROJECTS	FED. TAX	FICA (SOC. SEC.)	STATE TAX	SDI	VAC/ HOLIDAY	HEALTH & WELF.	PENSION		
			O												TRAING.	FUND ADMIN	DUES	TRAV/ SUBS.	SAVINGS	OTHER*	TOTAL DEDUC-TIONS		

S = STRAIGHT TIME
O = OVERTIME
SDI = STATE DISABILITY INSURANCE

*OTHER – Any other deductions, contributions and/or payments whether or not included or required by prevailing wage determinations must be separately listed. Use extra sheet(s) if necessary

CERTIFICATION **MUST** be completed
(See reverse side)

Form A-1-131 (New 2-80)

NOTICE TO PUBLIC ENTITY

For Privacy Considerations

Fold back along dotted line prior to copying for release to general public (private persons).

(Paper Size then 8-1/2 x 11 inches)

- -

I, _____, the undersigned, am the
(Name – print)

_____ with the authority to act for and on behalf of
(Position in business)

_____, certify under penalty of perjury
(Name of business and/or contractor)

that the records or copies thereof submitted and consisting of _____
(Description, number of pages)

are the originals or true, full, and correct copies of the originals which depict the payroll record(s) of the actual disbursements by way of cash, check, or whatever form to the individual or individuals named.

Date: _____ Signature: _____

A public entity may require a stricter and/or more extensive form of certification.

STATEMENT OF NON-PERFORMANCE

PAYROLL NO._____

Name of Prime/Subcontractor and Address _____

I do hereby state that no persons were employed on the construction of Project _____ during the payroll period commencing on the _____day of _____, 2_____ and ending the _____day of _____ 2_____

REMARKS:

_____
Signature of Authorized Person/Title

Date _____

CITY OF VICTORVILLE
EMPLOYEE INFORMATION SHEET
(SET-UP) Form #1

TO BE COMPLETED & SIGNED BY ALL EMPLOYEES
THAT WILL PROVIDE LABOR ON THE PROJECT
(MUST be submitted with FIRST PAYROLL

_____UPDATE INFORMATION ON EXISTING
_____NEW
_____W-4 FORM ATTACHED
_____NO OF WITHHOLDING EXEMPTIONS

EMPLOYEE DATA
EMPLOYER:_____

NAME: _____

MAILING ADDRESS: _____

CITY:_____STATE:_____ZIP _____

HOME PHONE NUMBER: (_____)_____

SOCIAL SECURITY NUMBER: _____

EMPLOYEE WORK CLASSIFICATION: _____

☐ APPRENTICE ☐ JOURNEYMAN ☐ TRAINEE ☐ WORKER

PAY RATE $_____ FRINGE RATE PER HOUR:_____

FRINGE BENEFIT(S) TO BE: ☐ PAID IN CASH TO EMPLOYEE
☐ PAID TO FUNDED PLANS DIRECTLY

ADDITIONAL DEDUCTION PAYMENT(S) TO BE SENT TO THE FOLLOWING:_____
_____

NAME OF PROJECT & LOCATION: _____
DATE EXPECTED TO START WORK: _____
DATE EXPECTED TO FINISH WORK:_____
RATE OF PAY MUST BE EQUAL TO OR ABOVE MINIMUM WAGE REQUIREMENT FOR EMPLOYE WORKER CLASSIFICATION AS SPECIFIED UNDER THE STATE PREVAILING WAGE.

Please have employee sign below that he/she is aware of the State Prevailing Wage requirements and acknowledges the anticipated rate of pay.

_____
EMPLOYEE SIGNATURE DATE

DAILY SIGN-IN LIST

(TO BE SUBMITTED WITH WEEKLY CERTIFIED PAYROLL)

Project Name:_____ Project No.:_____ Date: _____

Company Name	Employee Name (printed)	Employee Signature	Work Classification	Time In	Time Out